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ART. I. AN HISTORICAL REVIEW *of some early American Writers on* CROUP. By JOHN B. BECK, M. D.

I PROPOSE, in the following paper, to give a somewhat detailed account of the early publications which appeared in this country, concerning a disease which in no inconsiderable degree has attracted the attention and elicited the resources of our American practitioners. In attempting this task, I confess that I am mainly actuated by a patriotic motive, to do justice to a class of men whose labours and professional services have never been duly appreciated. Notwithstanding all that has been said concerning the degraded state of medicine in this country anterior to the Revolution, it will be found that even then we could boast of not a few in that profession, who in various erudition, in sound and sagacious views, and in bold and original practice, would not have suffered by a comparison with many of their European brethren. How unjust it would be to judge of these men entirely from the writings which they have left us, need not be insisted upon. Situated as they were, under circumstances

peculiarly adverse to literary efforts, it was not to be expected that they would have devoted much time to the labours of authorship. To induce men in any age to make these voluntary efforts, requires, at least, the stimulus of public patronage, and the prevalence of literary taste. These nurture ambition and elicit genius. For a very long period, these incitements, if not wholly wanting in this country, certainly exercised but a limited and feeble influence, and hence it was, that so few original publications made their appearance on this side of the Atlantic. Influenced by the existing wants of the country and the prevailing habits of feeling in the colonies, our physicians devoted themselves almost entirely to the practical discharge of their professional duties, and it was only on special occasions that they were induced to assume the character of authors. In looking over their productions, I have been sensibly struck with the singular excellence of not a few of them, and I have conceived that a review of some of them would be neither uninteresting nor uninstructive. Although by no means the earliest of our medical publications, those relating to croup have been selected for notice at this time, inasmuch as they afford specimens of native talent highly creditable to their authors and honourable to the country.

The first American writer on croup who claims our attention is Dr. Rush. In 1770 he addressed a letter on this subject to Dr. Millar, of London, the author of an essay on asthma and chincough. In this communication, Dr. Rush advances the opinion, that the croup is always a spasmodic disease. In his medical inquiries and observations, published subsequently,* he acknowledges himself to have been in an error in this respect, and adds, that from repeated observations, he was satisfied of there being another species of this disease, to which he gave the name of the *cynanche trachealis humida*, to distinguish it from the *cynanche tra-*

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* In 1794.

chealis spasmodica. The *spasmodic* croup he distinguishes, by its coming on suddenly, and generally in the night—by the frequent and perfect intermissions of its symptoms, without any discharge from the trachea, and by its yielding to antispasmodic remedies, especially the warm bath. The *humid* croup, on the contrary, is distinguished by its coming on *gradually*, and usually in the day time; by its increasing without any remarkable remission or even abatement of the symptoms; by the discharge of phlegm or mucus from the trachea, and by its not giving way to antispasmodic remedies.

Concerning the membrane formed in the trachea, Dr. Rush believed, that it was an accidental consequence of the spasmodic croup, and gives the following account of the way in which he presumed it to originate. "The vessels of the trachea and bronchiæ," says he, "always abound with a thin mucus which is poured into them in proportion as they are irritated by inflammation, or the action of the external air. Children abound with a greater quantity of mucus in those parts than adults; and when it is accumulated in the trachea or bronchiæ in a greater quantity than ordinary, they are unable, on account of their weakness, to bring it up. It is easy to conceive in what manner it is converted into a thin membrane after its more fluid parts are dissipated. We have an analogy of this in the nose. Were the passages of this organ less in our reach, it is probable a membrane resembling that found in the trachea would be found in it every four and twenty hours, especially when it was affected by a cold. We always find the phlegm accumulated in proportion to the time the disorder has continued. In all the cases of membrane mentioned by Dr. Home, the patients never died before the third day, and in many cases, not before the fourth and fifth days." Such was the opinion of our author on this subject in his first publication. He afterwards expressed the belief that the membrane was not present in the spasmodic croup, and that it was an effect only of what he denominated the *humid* species of this disease.

In the treatment of the spasmodic croup, Dr. Rush recommended venesection, when it was connected with pneumonic symptoms ; emetics, purgatives, and antispasmodics, especially the warm bath, opium, assafœtida, and blisters.

In the humid croup, beside bleeding, emetics, and purgatives, he recommends in the most emphatic manner the use of *calomel.* "Our principal dependence," he says, "must be placed upon this medicine. A large dose should be given as soon as the disease discovers itself, and smaller doses should be given every day, while any of its symptoms continue. The bark is scarcely a more certain remedy for intermittents than calomel, when thus administered, in this species of cynanche."

It may not be improper to state in this place, that some difference of opinion has existed as to the true nature of the disease described by Dr. Rush. Cheyne goes so far as positively to deny that it is croup.* That Dr. Rush did not at first very clearly understand this disease is apparent from his own admissions, and the changes which his opinions afterwards underwent; still the majority of writers have agreed with Cullen† in identifying it with croup.

The next writer whom I shall notice, is Dr. Samuel Bard, of New-York, at that time Professor of Medicine in King's College, who in 1771 published an essay, entitled "An enquiry into the nature, cause, and cure of the angina suffocativa, or sore throat distemper, as it is commonly called by the inhabitants of this city and colony." In this production, Dr. Bard speaks of the distemper as one which had lately appeared among the children in New-York, and as being of an uncommon and highly dangerous character. The account of the symptoms corresponds in general with that given of the putrid sore throat by Huxham and Fothergill, and our American writers, Douglass, Colden, Kearsley, and Ogden,

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* Essay on Cynanche Trachealis, p. 18, Am. ed.

† See Cullen's Nosology.

with this difference, that more particular mention is made of a symptomatic affection of the trachea and lungs, the existence of which is proved not merely from the symptoms before death, but from the history of three dissections, which present the morbid appearances usually observed in croup.

Dr. Bard next proceeds to compare this disease with the croup, or "suffocatio stridula," as described by Dr. Home; with the "malignant ulcerous sore throat," of Drs. Fothergill and Huxham, and the disease described by Dr. Douglass, of Boston, and concludes that "however they differ in the symptoms of putrescency and malignancy, they do all bear an essential affinity and relation to each other, are apt to run into one another, and, in fact, arise from the same leven, which, as Dr. Fothergill styles it, is a *stimulus of a peculiar nature*, which more or less, according to particular circumstances, generates an acrimony in the humours, and disposes them to putrefaction." According to Dr. Bard, the disease was evidently infectious, but he adds, that the infection did not depend so much on any prevailing constitution of the atmosphere, as upon effluvia from the breath of infected persons. Hence, he says, it would frequently run through a whole family, while the next door neighbour remained unaffected. In the treatment Dr. Bard first speaks of *blood-letting*, and after noticing the opinion of Fothergill, who dissuades from its use, he adds, neither "can I hear of any person who has used it with success or any remarkable benefit; so that I hardly dare venture to prescribe it, but must leave it to the discretion of the physician, until further experience shall confirm its utility or forbid its use."

Calomel was the medicine chiefly relied on; and for this practice Dr. Bard acknowledges himself indebted to Dr. Douglass, of Boston, whose opinion on this subject is quoted at length. Thirty or forty grains, or even a much larger quantity, it is stated, were given to a child of three or four years old, in the course of five or six days, with the most decided advantage, relieving the difficulty of

breathing, and promoting the separation of sloughs, "beyond any other medicine."

Oxymel of squills and ipecacuanha, administered so as to produce an emetic effect, are also advised.

Alexipharmics and antiseptics, among which serpentaria, contrayerva, and Peruvian bark, are considered the most powerful, are recommended when symptoms of putrescency appear. In the early stage of the disease, when inflammatory symptoms prevail, they are carefully to be avoided; and the sole dependence to be placed upon mercurials and diaphoretics. *Seneca snake root* is recommended, "as promoting the attenuating effects of the calomel."

Blisters are advised upon the same principle that they are applied in inflammatory anginas or pleurisies, to relieve the throat and trachea, and to derive the flow of humours from the internal to the external parts.

To me it appears very clear, that the disease described by our author, was not the genuine croup, but the cynanche maligna of nosologists; and the symptoms of croup, which formed so prominent a feature in some of the cases, were an occasional consequence of the primary disease of the throat extending to the trachea and lungs. In no other way can we account for its infectious character, and for the injurious effects resulting from the use of the lancet in its treatment; two circumstances wholly irreconcileable with the supposition of its being croup. That some of the prominent symptoms of croup were absent in a large proportion of the cases, appears from the statement of Dr. Bard himself, for he tells us that of seven children who were seized with the disease, three had "no difficulty of breathing." That a symptomatic affection of the trachea should ensue in cases of cynanche maligna, although unequivocally denied by one author,* cannot certainly be considered as very extraordinary. It is a fact con-

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* Cullen's First Lines, note by Dr. Caldwell, Am. ed. vol. 1. p. 257.

firmed by the testimony of almost every writer on the subject. Mr. Colden states that in the fatal cases of the putrid sore throat, among the last symptoms were "an oppression or straitness in the upper part of the chest, with difficulty of breathing, and a deep, hollow hoarse cough, &c." On dissection, too, he affirms that the lungs were found in a state similar to that of peripneumonic cases.*

Dr. Kearsley also describes among the fatal symptoms, "a suffocatio stridula, (croup,) the effects of a defluxion of acrid ichor upon the lungs."† In like manner Dr. Ogden mentions "a *hoarse cough*, as the last, and generally fatal symptom" of this disease,‡ and so does Dr. Chalmers.§ If therefore it be proper to denominate the disease described by Dr. Bard, croup, no reason can be assigned why the same appellation should not be bestowed upon that described by Colden, Kearsley, Ogden, and Chalmers, universally admitted to be the cynanche maligna. Dr. Bard, himself, probably has given rise to the error which exists on this subject, in maintaining the opinion that croup and cynanche maligna were the same disease.

The sagacious Cullen understood this subject perfectly. "From dissections it appears," says he, "that in the cynanche maligna, the larynx and trachea are often affected in the same manner as in the cynanche trachealis; and it is probable that, in consequence of that affection, the cynanche maligna often proves fatal by such a sudden suffocation as

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* A letter from Cadwallader Colden, Esq. to Dr. Fothergill, concerning the Throat Distemper. Medical Observations and Inquiries of London, vol. 1. p. 215.

† Observations on the Angina Maligna, or the Putrid and Ulcerous Sore Throat, with a method of treating it. By John Kearsley, jr. Practitioner of Physic in Philadelphia. Gentleman's Magazine for 1769.

‡ Letters on the Malignant Sore Throat Distemper. By Dr. Jacob Ogden. Medical Repository, vol. v. p. 97.

§ An Account of the Weather and Diseases of South Carolina. By Lionel Chalmers, M. D. of Charlestown. Vol. i. p. 92.

happens in the proper cynanche trachealis ; but there is reason to suspect, that upon this subject, *dissectors have not always distinguished properly between the two diseases.*"* The angina suffocativa of Dr. Bard, is accordingly placed in the Nosology of Dr. Cullen, under the head of cynanche maligna, and an impartial examination of the history of the disease justifies the correctness of the collocation.

Nevertheless, it seems proper to assign to Dr. Bard a place among our writers on croup, on account of his having insisted so largely upon the croupy symptoms so frequently attendant upon the putrid sore throat, and because it is probable that in his account he included all the occasional cases of idiopathic croup that occurred during the prevalence of the epidemic which he describes.

The next writer to be mentioned is Dr. Chalmers, of South Carolina. This physician, among the most accomplished of whom our country has ever boasted, beside other valuable productions of his pen, has left us an extensive account of the weather and diseases† of the colony in which he lived. In this work, marked by no common share of learning and observation, are to be found very distinct and accurate notices of our disease. In his chapter on quinseys, he gives us the following exact delineation of it.

" That sort of quinsey, which at once affects the voice with a cough and hoarseness from an inflammation or even an over fulness in the vessels of the *larynx* and *windpipe*, is of all others the most dangerous, and requires the speediest relief. Though a redness or swelling may not appear in the throat, nor the swallowing be at all difficult in this disease, it will nevertheless be known from the heat and pain that are perceived in these parts, when the patient can explain his feelings ; the fever and irregularly hard pulse ; a hoarseness,

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* Practice of Physic, vol. 1. p. 198.

† An Account of the Weather and Diseases of South Carolina. By Lionel Chalmers, M. D. 2 vol. 8vo. London, 1776.

which, however, is most distinguishable at the time of coughing or crying; a restlessness and difficult inspiration, and a frequent dry cough, owing to an oppressive sort of stifling, which proceeds from the blood being too much accumulated in the lungs and about the præcordia."* Children under seven years of age, he remarks, are most liable to this complaint.

In the treatment of this formidable disorder, bleeding, active purgatives, combined with antimonials, blistering the throat, and inhaling the steam of warm water, were the principal remedies upon which reliance was placed. Our author adds, "this complaint should be considered as a most *acute peripneumony*; and therefore it ought to be treated as that distemper usually is in its first stage."

In another part of his work, Dr. Chalmers gives a more extended account of this disease, under the appellation of the "suffocating or catarrhal peripneumony of children." After detailing its symptoms, he adds, "this distemper, in many respects, resembles that sort of peripneumony which succeeds a quinsey; and probably is owing to a slight inflammation, together with an excessive repletion in the vessels of the *glottis*, inside of the *trachea*, and lastly, of the *lungs* themselves."†

Bleeding, purging, blistering, together with the repeated use of emetics, are the means suggested for its removal.

In 1780, Dr. Peter Middleton, a distinguished practitioner of New-York, and Professor of Medicine in King's College, addressed a letter on the croup to Dr. Richard Bayley.‡ In this letter Dr. Middleton endeavours to prove that the *croup* is essentially different from the *sore throat distemper*, and that the method of treating it by calomel and antiseptics, so popular at that period, was founded on erroneous opinions concerning the true nature of the disease. He tells us, that

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* Account of the Weather and Diseases of South Carolina, vol. 2. p. 95.

† Ibid. vol. 2. p. 71.

‡ New-York Medical Repository, vol. xiv. p. 347.

when he first came to this city, in 1752, he found diseases of the throat of very frequent occurrence, and that by the inhabitants, as well as the practitioners of physic, they were commonly considered to be of a highly putrid and malignant character, and the ordinary mode of treatment was by administering large doses of *calomel*, accompanied with antiseptics. Being a stranger to the climate and its diseases, he states that he fell in with the prevailing notions on this subject. Observation and experience soon convinced him of his error, and he relates some impressive instances in which patients were sacrificed, in consequence of the disease having been confounded with the *sore throat distemper*, and the ordinary treatment for that complaint being pursued. The croup he considers a "disease totally distinct from the malignant sore throat: it is not of itself of a nature malignant or infectious, as the putrid sore throat may often be." On dissection, Dr. Middleton found a membrane lining the trachea, from the larynx down to the first division of the bronchiæ, which adhered to the trachea by a viscid mucus. The great bronchial divisions were filled with this mucus. The lungs were found congested with blood.

His theory of the disease is summed up in a very few words. He considers it "to proceed from a preternatural flow or discharge of mucus from the glands and vessels within side the trachea, which by the repeated transit of the air in respiration is gradually thickened, and at last condensed into that paper-like form, and which when formed, is difficult to remove, and constitutes not the least part of the danger."

In the treatment of the disease, Dr. Middleton rejected altogether the popular remedies, and in their place had recourse to copious blood-letting from the jugular vein, evacuants of various kinds, together with blisters applied to the throat. A case is related, in which this treatment was found eminently successful, so early as the year 1770. In conclusion, Dr. Middleton admits, that the credit of this mode of treatment was due to Dr. Bayley.

In the following year, (1781,) appeared a letter from Dr. Richard Bayley, of New-York, addressed to Dr. William Hunter, of London.* Unadorned by the graces of composition, this production is nevertheless of a most interesting character, and bears upon it the impress of a vigorous and original mind. What renders it the more valuable, is that it consists in a great measure of cases, illustrating his views concerning the nature and treatment of the disease. Dr. Bayley commences his letter, by detailing some cases of croup and putrid sore throat, which fell under his observation in the year 1774, in which the common mode of treatment by calomel and antiseptics was pursued. They all proved fatal, and from a comparison of the symptoms, with the appearances on dissection, he was induced to believe that the two diseases had not been distinguished by physicians, with sufficient accuracy. In particular, he states that the *hoarse noise* in the putrid sore throat had, no doubt, frequently been mistaken for the "*shrill voice*, which in a great measure is characteristic of the angina trachealis." And concerning the treatment, he adds, "the sudden death of many who have been affected with this complaint, convinced me that a more *determined mode* of treatment was absolutely necessary, in a disorder which appeared *altogether inflammatory.*"

In explaining his theoretical views of the disease, Dr. Bayley tells us "that the larynx, aspera arteria, and bronchial pipes have one common membrane, which we are informed by injection consists of little more than an infinity of blood vessels, and consequently liable to *inflammation*, as all vascular parts are. An increased action of these vessels, (as in pleuritic and puerperal fevers,) occasions a preternatural secretion of lymph, which from the ingress and egress of the air becomes condensed, and assumes the appearance of a mem-

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* Republished in the New-York Medical Repository, vol. xii, p. 331.

brane, and its compactness will depend on the age and habit of the patient, and the state of the atmosphere.

" The common opinion is, that those who die of this complaint are suffocated by the membrane's closing the windpipe. Another more respectable opinion is, that a spasm of the muscles of the larynx closes the scene. The circumstances which precede *death* in this disease, compared with those appearances which have regularly taken place in the cases which I have seen *successfully* treated, sufficiently explain the cause of the patient's death from the blood's circulation. To preserve the healthful state of an animal, it is necessary that the whole mass of blood should circulate through the lungs in a given time, and the free admission and expulsion of air contributes to this regular process; the change, also, which gradually takes place in the lungs, seems more directly to account for the swelled face, tumid jugulars, and the full staring eyes, which are symptoms that accompany the progress of this complaint; and add to this, the larynx, aspera arteria, and bronchiæ have been found pervious in every subject I have dissected, while the ramifications have been as regularly filled with a glary mucus."

Considering the disease altogether *inflammatory*, Dr. Bayley directed his curative indications to subdue the excessive action of the vascular system. Repeated bleeding *ad deliquium* from the jugular veins, the free use of tartar emetic and other evacuants, together with blisters to the throat, were the means used to accomplish this object. Several cases are related of the success attending this practice, in the years 1774 and 1779.

From the foregoing review it appears evident, that the subject of croup had scarcely began to attract the attention of the medical men of Britain, when it was investigated in this country, with a zeal and an ability, which must reflect the highest credit upon that period of our medical history.

A brief retrospect of what had been done on this interesting subject, anterior to this time, will exhibit in their true ght the substantial merits of our American physicians. To

Dr. Home, of Edinburgh, it has been customary to award the honour of having given the first perfect description of this disease.* The investigations of Michaelis, Cheyne, and Albers, have however rendered it certain that the disease, if not so accurately described, was unquestionably known and understood for a very long period before the appearance of Dr. Home's publication. Thus it appears that even the father of physic was not a stranger to it. And since his time many of the older physicians have noticed it, under various names.† That the illustrious Boerhaave was acquainted with the disease cannot be questioned.‡ And, according to Michaelis, a very accurate history of it was published in 1749, by an Italian physician, of the name of Ghisi.

Notwithstanding all this, it cannot be denied, that Dr. Home called the attention of physicians in an especial manner to this disease, and since his time it has been investigated with increased activity and success. It has indeed been maintained, that by Dr. Starr it had been accurately described so early as 1749. An attentive examination, however, of this author's paper is, I think, sufficient to show, that the disease which he describes partook more of the nature of the cynanche maligna, and accordingly, by Dr. Willan,‖ it is placed under that head. It is evident that the croupy appearances described by Dr. Starr, were symptomatic of the primary affection of the throat. That Dr. Starr had no very clear idea of the nature of croup, is admitted by a writer,¶ who seems anxious to do him full justice. Dr.

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* Published in 1765.

† According to Albers, in his learned work on the croup, notices of the disease are to be found in the writings of Hippocrates, Piso, Fernelius, Ballonius, Hildanus, Riverius, Ettmuller, Spigelius, and Severinus. Commentatio de Tracheitide Infantum, &c. &c. p. 37.

‡ Boerhaave's Aphorisms, No. 801.

‖ On Cutaneous Diseases, vol. 1. p. 247. Am. ed.

¶ A Treatise on Febrile Diseases. By A. P. W. Philip, M. D. vol. 2. p. 150. Am. ed.

Home, may therefore, with propriety, be considered as the first English writer on this disease. Next to him succeeded Dr. Crawford, who, in 1771, published his "Disquisitio Med. Inauguralis de Cynanche Stridula." In 1778, appeared the elaborate work of Michaelis of Gottingen, entitled, "Dissertatio Inauguralis de Angina Polyposa sive Membrancea." These, I believe, were all the foreign writers, of any character at least, who had appeared at or about the time in which the American physicians just noticed, gave their publications to the world. Dr. Rush published his letter to Millar in 1770. Dr. Bard's essay appeared in 1771. The work of Dr. Chalmers was published in 1776. The letter of Dr. Middleton was written in 1780, and that of Dr. Bayley in 1781. As having been, therefore, among the earliest in investigating this interesting disorder, and certainly at a time and under circumstances by no means propitious to literary enterprizes, no small share of applause is due to the physicians just mentioned. It is not upon this circumstance alone, however, that we ought to rest their claims to consideration. Concerning the nature and mode of treating this disease, they have given us suggestions and observations which have been sanctioned by the more enlightened pathology of succeeding times. On this subject it may not be uninstructive to go somewhat into detail; and,

First, concerning the membrane lining the trachea in croup. By Home, the very erroneous opinion was entertained, that this membrane was the result of a secretion of *mucus* on the inside of the trachea, and that the formation of it was the *cause* of the disease. Michaelis, also, although he controverts the opinion of its being mucus, believed that the membrane, or, as he called it, the polypus, was the *cause* of the disease. On the contrary, Dr. Rush maintained, that the membrane, so far from being the cause, was merely a consequence of the disease, and moreover, that its presence was by no means essential to characterize it. An opinion which has been most unequivocally confirmed by subsequent observations; numerous cases being on

record, in which, on dissection, no membrane has been detected.* The views of Dr. Bayley, however, with regard to the nature of the disease, and of the membrane lining the trachea, appear to me to have been more consonant with sound pathology, than those of any writer at that period. From the extract already made from his letter, it appears, that he believed the disease to consist of an inflammation of the inner coat of the trachea and bronchiæ, and that, as a result of this increased action in those parts, an effusion of lymph ensues, which afterwards assumes the appearance of a membrane. It is satisfactory to add, that similar views, in relation to this subject, are promulgated by our latest and most popular writers on this disease.

2. Dr. Bayley, of New-York, is entitled to the credit of having insisted more largely upon the *inflammatory* character of the croup, than any writer who had preceded him. Indeed, the main object of his essay is to establish this point, and at the same time to recommend the efficacy of a corresponding treatment. Liberal blood-letting, it is true, had been practised before this, by Home and others, but Dr. Bayley, upon juster and more comprehensive views of the nature of the disease, pushed this remedy to an extent hitherto unknown. As already stated, he bled from the jugular vein *ad deliqu ium*, not once, but repeatedly, if necessary, and the rest of his treatment was marked by similar vigour and decision. I am aware that the merit of this practice has not long since been given to another person, by one of the ablest and most eloquent writers of our country. Dr. Chapman, of Philadelphia, in his "Thoughts on the Pathology and Treatment of Cynanche Trachealis, or Croup," after

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* For the elucidation of this point, the medical public is especially indebted to Dr. Jackson, of Boston, and Dr. Chapman, of Philadelphia. See the New-England Journal of Medicine and Surgery, vol. 1. p. 383. and the Philadelphia Journal of the Medical and Physical Sciences, vol. 1. p. 310.

commending the practice of bleeding *ad deliquium*, adds, "this valuable suggestion I derived from Dr. Dick, of Alexandria, one of the most original, bold, and successful practitioners of our country. It has been claimed, I understand, elsewhere, with what justice I pretend not to determine. That however the practice was adopted at least thirty years ago, by this distinguished physician, is unquestionable."* Without wishing to detract in the smallest degree from the general and acknowledged merits of Dr. Dick, it must be admitted that his claims to originality in this practice, are entirely destitute of foundation. Dr. Bayley's publication, recommending it, appeared about ten years before the time alluded to by Dr. Chapman, and it is very evident that he had tested the practice during a pretty long and extensive experience, before that period. It is the more surprising that Dr. Chapman should have fallen into this error, when we find the following in the works of Dr. Rush. "The late Dr. Bayley, of New-York, used to bleed until fainting was induced. *His practice has been followed by Dr. Dick, of Alexandria, and with great success.*"† To set this matter at rest, and at the same time to exhibit a specimen of Dr. Bayley's general mode of managing the disease, I cannot do better than to extract from his letter the account of a very interesting case which fell under his care. "In the latter part of September," says he, "I was sent for to the seat of Peter Stuyvesant, Esq. to visit a servant boy about two years old. In the spring it had been much afflicted with the hooping cough, a little fever pursued it for a month or six weeks, when it became very much reduced. An unexpected alteration, however, took place; the child recovered fast during the two last summer months, and in the beginning of September was in perfect health. About the 20th it grew un-

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* The Philadelphia Journal of the Medical and Physical Sciences, vol. 1. p. 303.

† Medical Observations and Inquiries, vol. 2. p. 278.

easy in the evenings, and its sleep was frequently interrupted; this continued several evenings and nights successively; a cough, accompanied with hoarseness, attended the feverish symptoms; the cough intermitted, though the hoarseness was permanent from the beginning. When I first saw it, the difficulty of breathing was excessive, and the *hoarseness* accompanied with a *shrill sound*, very distressing to every ear; its face was enlarged and apoplectic, and its eyes altered to a stare; the jugulars were very tense and swollen. In this deplorable situation, it would have been presumptuous not to have been apprehensive for its recovery. It was attempted to bleed the child in the arm, but four ounces of blood could only be obtained, which was judged to be a quantity by no means sufficient to answer any salutary purpose. It was then bled from the *jugular ad deliquium.* Tartar emetic was given in doses to excite vomiting, a blister was advised to cover the larynx and aspera arteria, and directions left to continue the tartar emetic in small doses, so as to keep up a sickness at the stomach, and frequently to throw up a glyster.

"Dr. Michaelis, Physician General to the Hessian Staff, did me the favour to accompany me in my second visit; we were pleased to find the child had passed a tolerable night, though the hoarseness was still considerable, and its respiration difficult. On examining the blister, it was found to have drawn well, though it had not been applied so high as to cover the larynx and fauces. The child was again bled *ad deliquium* from the jugular; a few grains of calomel were directed to be given with an infusion of senna and manna; this was to be continued until it produced several stools; recourse was then to be had to small doses of tartar emetic, until I repeated my visit. On the succeeding day the child puked twice a thin glary matter with some mucus, which was said to have been exceedingly offensive when first thrown up; but when I first saw it, (fourteen hours afterwards,) it had scarcely any or no offensive smell. The child at this time was in a great measure recovered, the hoarse sound scarcely perceptible, the

cough very little troublesome, and without fever. From this date, the symptoms grew more and more favourable, and by a continuance of the same treatment, the child perfectly recovered."

It is impossible to read the foregoing account, without being struck with the exact similarity between the treatment here pursued, and that afterwards recommended by the late Dr. Ferriar.*

3. The practice of administering *calomel* freely in this disease, originated, I believe, exclusively in this country. Who is entitled to the merit of first suggesting it, cannot, at this distance of time, be determined with any degree of certainty. Dr. Chapman claims it for Dr. Kuhn, of Philadelphia, by whom, he says, it "was originally employed in croup, so early as the year 1770."† That this is not correct, must appear very evident, from the preceding history. It is undeniable, that long before this period, calomel was the fashionable remedy in this city, in all diseases of the throat and neighbouring organs. This fact is abundantly established by the writings of Middleton, Bayley, and Bard. Another writer, in treating of this subject, tells us, that Dr. Bayley recommended calomel in this disease, and adds, that "there can be little doubt that this is the *earliest* recommendation of mercury in the curative treatment of hives."‡ This assertion is the more extraordinary, because the same writer informs us, that by Dr. Bard, who wrote ten years before Dr. Bayley, "the free exhibition of mercury is strongly enforced as a proper means of cure."§ Besides, so far from Dr. Bayley even recommending, or approving of this prac-

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* Medical Histories and Reflections, p. 367. Am. ed.

† The Philadelphia Journal of the Medical and Physical Sciences, vol. 1. p. 307.

‡ American Medical Recorder, vol. v. p. 407.

§ Ibid. vol. v. p. 406.

tice, the professed design of his publication was to combat the popular notions in favour of calomel and antiseptics.

If there be any merit at all in the practice, it seems more justly due to Dr. Douglass, of Boston, than to any other person with whose name it has hitherto been associated. It is true, the disease in which this eccentric, but able physician, used the calomel, was the epidemic "sore throat distemper." But it is equally certain, that at that early day, no distinction was made between these two diseases; and Dr. Bard, who insists most unequivocally upon the mercurial treatment in croup, acknowledges himself indebted for the suggestion to Dr. Douglass.* It is of the less importance, however, to settle this question, because there is little probability, that the practice will ever perpetuate the fame of its author, whoever he may be. It is unquestionable, that calomel has lost much of the high fame which it had acquired as a reme-

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* Nearly a century ago, (1736,) this physician published an account of the epidemic sore throat, in which he extols the virtues of mercury. As a specimen of the medical reasoning of the times, I shall transcribe what he says on this subject. "Any affection of the throat does frequently produce a natural ptyalism. Mercurials, used with discretion, are a kind of specific in such like ulcers, and ulcuscula, and, in fact, here moisten the throat and mouth, stop the spreading of the ulcuscula, and promote the casting off of the sloughs; and as an accessory advantage, the patients being mostly children, destroyed worms. Amongst all the preparations, *calomel* answered best. The gentle vomiting, and few stools that it occasioned in some, did not confound the natural course of the distemper. Turbith produces too strong a revulsion, and the eruption is thereby too much diverted. This distemper did not well bear any other evacuation but mercurials." And in another place he adds, "the dispumation of this acrid inquination of the juices of our distemper, that is, its natural crisis, seems to be by the patent and salutary emunctories of the fauces and skin. In corrosive taints, u. g. venereal and others, a mercurial ptyalism, and sudorific decoction of the woods, answer best; this gave us the hint of promoting the tendency of nature in our illness, by mercurials, and gentle breathing sweats in bed, which, with good management, seldom failed, excepting where the necrosis was irremediable from the beginning."

dy in croup. In Europe, indeed, it seems never to have commanded the entire confidence of the profession, and in this country it has certainly been robbed, in a great measure, of the popularity which it once enjoyed. Notwithstanding the belief prevalent abroad,* few practitioners among us would be found bold enough to rest their chief reliance upon this remedy, in the management of croup. On all hands, it is now conceded, that this disease is of a highly inflammatory character, to be combated by the most efficient agents in our possession, and among these, copious blood-letting, emetics, and purgatives, hold the most conspicuous rank.

How calomel should ever have acquired such celebrity in this country as a specific for croup, is a matter of curious and interesting speculation. Dr. Hamilton, of Edinburgh, who tells us that he was induced to give it a fair trial, says, that "the result of his experience has been so very different from that of the American practitioners, that he can only explain it on the supposition, that in different climates, the same disease is relieved in different ways."† This explanation is certainly not satisfactory. There is scarcely a disease apparently less modified in its character by climate, than the croup. At any rate, there seems to be not the slightest difference between it, as it exhibits itself in this country, and in Scotland. A true solution of the difficulty, it strikes me, may be sought for in the fact, that at the period when mercury gained its high reputation in this disease, no distinction was made between it and the putrid sore throat. Both disorders were accordingly treated in the same way, by calomel and antiseptics, and as the sore throat distemper, in

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* "In some parts of America, calomel has been employed for many years, as the chief remedy in cynanche trachealis." Observations on the Use and Abuse of Mercurial Medicines. By J. Hamilton, M. D. p. 170. Am. ed.

† Observations on the Use and Abuse of Mercurial Medicines in various diseases. By James Hamilton, M. D. p. 174. Am. ed.

which the success of the mercurial practice seems to have been unequivocal, was the more common of the two, it may readily be conceived how the practice might gain upon the confidence of the profession, even though most of the cases of idiopathic croup should be falling victims to it. This explanation acquires additional plausibility when it is recollected, that so soon as a rigid discrimination began to be instituted between the sore throat and the croup, calomel fell at once from the lofty eminence which it had attained as a specific in the latter disease. This fact is very impressively illustrated in the papers of Doctors Middleton and Bayley, both of whom concur in the opinion, that many patients were sacrificed by a blind devotion to the mercurial practice. In addition to this, it may be proper to state, that the writer* who expatiates most largely upon the virtues of this treatment, avows his belief in the identity of the two diseases. That it was not always successful even with him, may justly be inferred from the fact, that the *dissections* which he gives us, were cases in which the symptoms of croup predominated.

I have been at the more pains to investigate this point, because it is one of those cases in which medical testimony appears strangely contradictory and inconsistent. It would afford a subject of general congratulation were this the only instance of the kind to be met with in the records of medicine. Unfortunately, however, too many of them still exist, and not unfrequently expose to ridicule and contempt, a science, at once profound in its principles, ennobling in its objects, and illustrious in the benefits which it has conferred upon mankind.

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* Dr. Bard.

Art. II. Observations *on the* Secale Cornutum, *or* Ergot; *with Directions for its use in Parturition.* By John Stearns, M. D. of New-York.

We have no information when the *secale cornutum*, or ergot, was first introduced into medicinal use. It may have experienced the vicissitudes of other medicines, whose alternate rise and fall, not being known to succeeding ages, have been repeatedly promulgated to the world as new discoveries. It has been recently supposed to have constituted the grand arcanum of a Dutch accoucheur in Holland, who, in 1747, acquired great fame for his success in obstetric practice. It was subsequently used in France, till it was interdicted by a legislative act, in 1774. Not being subjected to experimental tests, nor prescribed by scientific rules, it was probably exhibited in quantities, and at times, very unfavourable to its safety and success. The injurious effects of such vague practice, and the prevalent opinion that it possessed deleterious qualities, were the probable reasons that caused its rejection.

It was not till the year 1807, that the ergot ever appeared before the public in a form to arrest the attention of medical men. Some years previous to this I was informed of the powerful effects produced by this article in the hands of some ignorant Scotch women in the county of Washington. Determined to try its efficacy, I procured a quantity from a field of rye. My information was such as to impress upon my mind the necessity of extreme caution in my first experiments. The continued influence of this impression upon my subsequent practice, has been a source of much consoling reflection. It has tended to prevent those fatal errors which have so often occurred, and which I trust will be satisfactorily explained in the ensuing remarks.

The frequent recurrence of cases in obstetric practice afforded ample opportunities of executing my design to perfect satisfaction. I gave it in powder and decoction, but the superior efficacy and convenience of the latter soon gave it the decided preference; and in no instance did I ever give more at a dose than ten grains; the ordinary quantity was much less. Its sudden and powerful operation upon the uterus, early taught me the necessity of those rules which I subsequently published, and which experience has since amply confirmed. The publication of my letter to Dr. Akerly, in 1807, produced an immense number of applications from remote practitioners. I immediately forwarded to each samples of the ergot, with directions for its use. By these means it was sooner introduced into general practice than I anticipated. Its use was much extended in New-England, by the judicious dissertation of Dr. Prescott, read before the Massachusetts Medical Society, in 1813. The New England Journal of Medicine and Surgery contained the opinions and experience of several practitioners in that section of country. While it met with general approbation and success, some ascribed to it the fatality of still born children; and a few, probably influenced by the prejudices of the French, considered it deleterious. The latter opinion was supported by Dr. Mann, Surgeon General of the Northern Army, in a series of essays published in 1813, and intended to prove that the pneumonia typhodes, then prevalent in the country, derived its origin from this source. This was amply refuted by Dr. Henry S. Waterhouse, in a paper published in the New-England Journal.*

The same opinion has been reiterated in some periodical works, and inaugural dissertations, which the young authors imagined they had fortified by experiments upon insects. But it is not by such analogies that important principles in medi-

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* N. E. Journal, vol. 5. p. 235.

cine are to be settled. We must refer to the human system as the only correct test for experiments of this sort. And here we find rash practitioners exhibiting the ergot by ounces, to the extent of a quarter of a pound, in less than twenty-four hours ; and in some instances of amenorrhœa and illegitimate impregnation, it has been continued in large quantities for weeks and months, without producing any deleterious effects upon the females, or upon the fœtus in utero. The suggestion of its deleterious influence upon the child, when cautiously given in ordinary parturition, is undeserving of serious notice. Those who exhibit this article in such enormous quantities, and at times and under circumstances unfavourable to its success, and then proclaim it to be "fatal," or "inert," are influenced by other motives than a desire to elicit truth. Tried by such practice, opium, mercury, and antimony, would long since have been condemned and rejected from the materia medica, and the last was actually consigned to this fate, by the civil authorities of France, after its fatal effects had been *fully proved* by the bold empiricism of that day.

In the accounts which impute the death of still born infants to the ergot, we do not find that minute detail of symptoms, of the quantities given, and of the times and circumstances of its exhibition, which are necessary to enable us to form a correct opinion of the propriety of the prescription. No one can hesitate to believe, that, under certain circumstances, such must be its inevitable effects. And I most sincerely admonish all those who experience such ill success, entirely to abandon its use. On no principle can a continuation of such practice be justified. I can, however, with much satisfaction affirm, that such has not been the result of my experience, and in no instance has either mother or child sustained any essential injury, which would not have been aggravated by its omission. These remarks are fortified by the testimony of many eminent accoucheurs, whose obstetric practice has been extensive, and most of whom have used it for the last fifteen years with the most

complete success.* This discordance of opinion can be explained only by supposing a difference in the circumstances, modes, and times, of its exhibition.

It is important, however, to remark, that those cases which indicate the use of the ergot, would have proved hazardous to the life of the mother or child, and peculiarly distressing to both, if it had not been given. When, therefore, these unfavourable effects occur after its exhibition, they are very improperly attributed to the ergot, instead of their real cause, the intrinsic difficulty of the case. It is to prevent these, and to save life, that it ought ever to be prescribed. These effects I have often witnessed, and for this purpose has it frequently been administered by others with equal success. But never, I hope, will this, or any other recommendation of its utility, delude others into the use of it for any other purpose, or under any improper circumstances. If such, in any instance, has been the effect of the opinion that I published in 1807, "that it never produced any bad effects on the patient," I now solemnly retract it. Its bad effects have been too often asseverated to admit of a doubt. I did not then anticipate the abuses to which it has since been subjected. Should these continue, another legislative interdict would be extremely desirable.

To arrest the evil consequences of such practice, and to restrain the use of the ergot, I published in the 7th vol. of the New-England Journal, some plain and important rules, which I deem proper to subjoin, with explanatory remarks, and the addition of those cases in which its use is particularly indicated.

1. "It should never be administered where nature is competent to a safe delivery."

In elucidation of this rule it may be observed, that par-

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* N. E. Journal, passim. Med. Rep. 6 vol. N. S. p. 403. Drs. Prescott, Chapman, &c. &c.

turition is one continued process from beginning to end; one portion of which, like the links of a chain, necessarily precedes, in close connexion, that which follows, thus preparing in regular succession suitable changes in the parts concerned. If the interference of art interrupt this order of nature, the chain will be broken, and the whole process may be converted into a difficult labour.

2. It should never be administered until the regular pains have ceased, or are ineffectual, and there is danger to be apprehended from delay.

3. "It should never be administered until the rigidity of the os tincæ has subsided, and a perfect relaxation induced."

I am aware, that in my first publication, I intimated that the success of the ergot probably arose from a nausea excited in the stomach, and thence affecting the uterus by sympathy, produced a correspondent relaxation in the rigid fibres of the os tincæ. Subsequent experience has not justified this conclusion, and I have always found it necessary in such cases to premise copious bleeding.

4. "It should never be administered in the incipient stages of labour, nor until the os tincæ is dilated to the size of a dollar."

The success of the ergot is in no case more evident than in the suitable time of its exhibition. Although often given to procure abortion, it does not appear to have succeeded. It also generally fails of complete success when given in the early stage of labour, and before the os uteri is sufficiently dilated and relaxed. The pains induced under these circumstances, often terminate before the labour is fully accomplished. If it is delayed till these favourable changes are produced, its success in promoting the action of the uterus is more certain than tartrite of antimony upon the stomach, or jalap upon the intestines. But while an attentive observation of its effects, under different circumstances, in several hundred cases, have enabled me to predict its precise operation in almost every instance, I feel incompetent to explain why it fails in the one, or succeeds in the other. Its modus operandi is a desideratum, to harmonize conflicting opinions,

to prevent, in all cases, its injurious effects, to show why, under certain circumstances, it is inoperative, and under others, powerfully efficacious. Dr. B—— informed me, that he once gave it to a woman before any symptom of labour had appeared, to enable him to perform a journey which this case delayed. In one hour labour actually commenced, and regularly proceeded through its different stages to a safe and expeditious delivery. Had the presentation in this case been wrong, and other circumstances unfavourable, his premature prescription might have been fatal to both mother and child. I therefore seriously admonished him never to repeat it in a similar condition.

5. " It should never be administered in any case of preternatural presentation that will require the fœtus to be turned."

The efficacy of the ergot is fully proved by the peculiarity of pains which it induces. From five to twenty minutes we first discover a bearing down effort of the patient. This gradually increases without the least intermission till the delivery is completed. During such an uninterrupted action of the uterus, all efforts to turn the fœtus must be unavailing and hazardous.

6. " It should never be administered during the continuance of one labour, in larger quantities than thirty grains by decoction in half a pint of water." A table spoonfull of this given every ten minutes, generally succeeds better than a larger dose. While this quantity produces its most favourable effects upon the uterus, it does not affect the stomach with nausea or vomiting, which sometimes interrupts its successful operation.

Three grains, with a grain of opium, steeped in a gill of water, and a tea spoonfull given every ten minutes, have succeeded in reproducing the interrupted pains of regular labour. I have, therefore, generally preferred it in this form, as being perfectly safe, and exempt from the objections to the incessant forcing pains induced by larger doses.

By a due observance of these negative rules, it will be

perceived, that but few cases can occur that will require the ergot; and for several years past I have not found it necessary to administer it oftener than in one for every thirty that I have attended. But so important do I consider it in certain cases, that I always have it ready for use on the occurrence of any emergent symptoms that may render it immediately necessary.

I will now proceed to consider those indications which render its exhibition necessary and important.

The ergot is indicated, and may be administered,

I. When, in lingering labours, the child has descended into the pelvis, the parts dilated and relaxed, the pains having ceased, or being too ineffectual to advance the labour, there is danger to be apprehended from delay, by exhaustion of strength and vital energy from hemorrhage, or other alarming symptoms.

II. When the pains are transferred from the uterus to other parts of the body, or to the whole muscular system, producing general puerperal convulsions.

After premising copious bleeding, the ergot concentrates all these misplaced labour-pains upon the uterus, which it soon restores to its appropriate action, and the convulsions immediately cease. A remarkable instance of its efficacy in these affections, is contained in a letter which I received from Dr. Henry S. Waterhouse, of Franklin county, and is too interesting to be omitted in this place.

"Mrs. L. H., of nervous temperament and delicate habit, aged 19, was, on the 24th of June, 1814, seized with the usual precursory symptoms of parturition. I found her affected with wandering pains of the back and abdomen, some throbbing pain of the head, and a tense pulse, though natural in frequency. The loss of 15 ounces of blood, with fomentations to the abdomen, and a dose of opium, gradually gave her relief, and at evening she fell into a quiet and refreshing sleep. The next morning I was sent for in haste, and was informed, that after a quiet night, she discovered in the morning some symptoms of derangement. She com-

plained of wandering pains in the abdomen, and of a throbbing sensation in her head. These symptoms increased till the most horrid form of puerperal convulsions was brought on, that I ever witnessed. She was constantly muttering things in an incoherent manner; her eyes were rolling from side to side, and turning up in their sockets. She had so frequently bitten her tongue, that the blood was flowing profusely from her mouth; her extremities were of a deadly coldness, and the violent spasms and contractions of the muscles of her limbs, back, abdomen, neck, and lower jaw, were truly alarming. The pulse was natural, but less frequent than in health. With much difficulty her lower extremities were immersed in warm water, and large quantities of the tinctures of opium and assa fœtida were forced down. Her abdomen was fomented, and her extremities smartly embrocated with stimulating applications, &c. but all to no purpose. There was no hemorrhage, but from the condition of my patient, it was impossible to make that accurate examination per vaginam that I wished. I could, however, ascertain that the os uteri was in a small degree dilated. The circumstances were so urgent that I could not defer the use of means till I could procure a consultation. Her strength was rapidly wasting, pulse small and frequent, breathing laborious, and countenance ghastly. The ergot presented itself to my mind as the only probable means of saving her life. I mixed thirty grains in a small quantity of warm water, and gradually insinuated a table spoonful between her teeth, worked it into her mouth, and in two or three minutes she had swallowed it. The effects were almost instantaneous and truly astonishing. Her spasms gave way, the operations of her mind became regular, and she awoke, as she supposed, from a disturbed and painful sleep. She complained of much weariness. A strong cup of tea was given her with some light nourishment, and she soon fell into a quiet sleep. In the evening following, true and forcible labour-pains came on, and I delivered her in a short time with perfect safety."

III. When in the early stages of pregnancy, abortion becomes inevitable, accompanied with profuse hemorrhage and feeble uterine contractions.

IV. When the placenta is retained from a deficiency of contraction.

V. In patients liable to hemorrhage immediately after delivery.

In such cases the ergot may be given as a preventive, a few minutes before the termination of the labour.

VI. When hemorrhage or lochial discharges are too profuse immediately after delivery, and the uterus continues dilated and relaxed without any ability to contract.

I have thus exhibited a general view of the errors often committed in prescribing ergot, of the unfavourable results of such practice, of those cases in which it never ought to be administered, and of the indications which render its exhibition necessary and important. These remarks are derived from actual experience in several hundred cases, and are confirmed by those whose observations have been the most extensive and correct. While there is reason to suspect the influence of prejudice upon the minds of some who oppose its use, their own statements generally admit their very limited opportunities for witnessing its effects, and in some instances, while using it in their first experiments, on which their opinions were founded, that they grossly deviated from every direction calculated to ensure success.

While the frequent occurrence of such abuses is to be deplored, much satisfaction may be derived from the reflection that a prudent and judicious use of this article, has in a great variety of instances contributed to save the lives of the mother and child. That such will continue to be its effects when directed by a discreet, judicious, and experienced practitioner, we have the most satisfactory reason to infer from past experience, and from the peculiar properties and operation of the ergot.

Art. III. Cases of Hydatids *in the* Bladder *and* Liver. *By the late* James Low, M. D. *of Albany*, (N. Y.)*

Case I. *Hydatids in the Bladder.*—Mr. S———, aged 29, of a thin spare habit of body, made a voyage to London in the year 1810. He sailed from New-York late in the autumn of that year, and arrived on the coast of England about the latter end of December, at which time the weather was not only very boisterous, but excessively cold, to all of which he was constantly exposed. While beating about in the English channel, he was seized with what he termed a difficulty of passing water (or strangury.) This continued till he arrived in London about the second week in January, 1811, when from the use of diluents, anodynes, &c. he was partially relieved. He consulted some of the first physicians in London, who advised nothing more than what has been above specified.

In his voyage from Liverpool, in 1811, to New-York, he had a second severe attack, which was gradually relieved by the same means he had formerly used. About two months after his arrival in this place, on a third attack, he consulted me. I found him labouring under a degree of strangury, but of a kind totally dissimilar from any I had before seen.

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* A friend, to whom we are indebted for this communication, informs us, that the cases are selected from the records of a private medical society formed at Albany some years since, for the purpose of mutual improvement. Those who were acquainted with Dr. Low, in the prime of health and mental vigour, will readily appreciate his value in such a body; and the surviving members conceive that they will offer the best tribute of respect to his memory, in communicating some of the results of his observations to the public. B.

I ordered him, however, large doses of nitrate of potash and opium, with plentiful draughts of barley water. During the use of these medicines, his water suddenly stopped, and it appeared as if some immoveable body plugged up the calibre of the urethra. On his pressing at the point of obstruction, the obstructing body appeared to give way, and the water again to flow freely. Being informed of this circumstance I was induced to examine the water, and found floating ini a number of scaly membranous bodies, and on closer inspection, a number of very small, but perfectly entire hydatids.

I immediately ordered him the tinct. oxymur. ferr. in doses of *gtt.* xii. four times a day, from which period, enormous quantities of hydatids were daily passed, some entire some broken, for the first ten days ; after that time they gradually diminished, and in a few days, totally disappeared. The patient continued the medicine for about a month, and has since been perfectly free from disease. It would be almost superfluous in me to say, that my *methodus medendi* was derived from the excellect treatise of Mr. Carmichael on cancer, and other anomalous diseases. From the effects of iron in this, and many other analogous cases, much importance is added to the practice as well as theory of Mr. Carmichael.

Case II. *Hydatids in the Liver or Ovarium.*—In the summer of 1808, I visited Mrs. K———, aged 73, of a large and athletic stature, sanguine temperament, and firm and vigorous constitution. She informed me that for the last three years, she had been afflicted with a dull heavy pain in the right side, and that within a short time she had attended to all the concerns of the family herself, which must have been considerable, as she supported herself by keeping a boarding house. About this period, a tumour as large as a goose-egg made its appearance immediately above the right ilium, and was extremely painful. It confined her for the most part to her bed. On consultation with the late Dr. M'Clelland, it was agreed to open into the tumour. I accordingly plun-

ged an abscess lancet into it ; a quantity of limpid serum immediately followed, but suddenly stopped. I enlarged the opening, and to my surprize found a large hydatid plugging it up. I perforated it with a probe and withdrew it. To this succeeded another and another. These hydatids were from the size of a common currant, to that of a goose-egg; and one, from the size of a sac which was ruptured in the extraction of it, must have contained nearly a pint of water. I preserved some of them entire, at least an inch and a half in diameter. The incision continued open, and the patient to discharge these parasitical animals, for three or four months. At each discharge she obtained temporary relief from the dull pain which still continued. About this time the orifice closed, her strength and appetite failed, and a distressing cough supervened. I had no hopes that she could long survive. An occasional laxative, some expectorant medicines, and other palliatives, were all that she took. In about a fortnight the orifice opened again of itself, but no hydatids appeared; a slight oozing of thin serum was all she discharged, but with considerable relief to all her other symptoms. It is now five years since the operation, and this alternate opening and closing of the orifice has continued, and still continues, with the same relief and aggravation of symptoms. She is, on the whole, more comfortable at present than she has been in any preceding year. On the lowest calculation, she must have evacuated from five to six hundred hydatids.

I know not that in any former case living hydatids have been seen in the human body. Yet did I at all times neglect accurately to examine their degree of vitality, which might easily have been done. This I regret extremely, as no such opportunity has occurred either to Morgagni or Baillie, both of whom have so minutely described them in the dead subject. They formerly have only been found alive in the inferior animals, particularly in the brain of sheep.

ART. IV. LETTER *on* FEBRILE CONTAGION: *addressed to* DAVID HOSACK, M. D. F. R. S. *Professor in the University of the State of New-York*, &c. BY JOHN W. FRANCIS, M. D. &c.

LONDON, *June* 16, 1816.*

DEAR SIR,

Within a few days I set out for Bristol, and in all probability this is the last letter you will receive from me dated London. The present communication might be devoted to many interesting subjects, medical and philosophical; but I am induced from several considerations to restrict my attention particularly to one.—You have long been acquainted with the important controversies that have existed on that grand subject of medical disputation, contagion; with the various and contradictory opinions that have been promulgated as to its nature and effects; and with the manner in which those controversies have been conducted, especially by American physicians. The question of contagion and infection has also occupied, as you well know, a large share of the attention of the medical writers of Great Britain, especially within the last few years. Much less diversity of sentiment, however, exists in this country than in our own, and in the discussion much less of asperity has been manifested. A single exception occurs in the case of Dr. Bancroft, in his late "Essay on the Disease called Yellow Fever:" a work

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* During the Writer's residence in Great Britain, finding the question, Whether the human constitution is susceptible of a second attack of Yellow Fever? occupying a large share of the attention of the medical profession, it occurred to him, that the ample experience enjoyed by the physicians of the United States, would go far in settling this controversy. With the view of calling the attention of American Practitioners to this subject, and of obtaining the results of their observations, the above letter is published. These results shall be made known in a future number of this Journal.

intended by the author to prove that this form of fever is occasioned by the operation of marsh miasmata, and is non-contagious ; and of which performance it is due to the talents of the author to admit that he has displayed great learning and research. As one practically acquainted with the disease during its visitations in America for a period of more than twenty years, your own ample experience will have enabled you at once to perceive the fallacy of such speculations. Indeed, the volume of Dr. Bancroft has most materially aided in the establishment of the very doctrines which it was his object to overturn. Few writers have entered the field of controversy with stronger prejudices, and, perhaps, none have communicated their thoughts with less deference to authority and in more illiberal language. It would appear to be the opinion of Dr. Bancroft, judging from his conduct, that gross invective and personal abuse may supply the place of well authenticated fact and legimate deduction.

The revival in England of the controversy relative to the specific form and contagious nature of yellow fever, has been the means of giving birth to several works of great practical value, and, in my opinion, deciding the great question, if indeed any thing had been wanting after the laborious investigations of yourself and other American physicians. The volumes of Sir James Fellowes and Dr. Pym have just made their appearance here, and may not yet have reached you. The former author has published the results of his practice under the title of *Reports of the Pestilential Disorder of Andalusia, which appeared at Cadiz in the years* 1800, 1804, 1810, *and* 1813 *; with a detailed account of that fatal Epidemic as it prevailed at Gibraltar during the autumnal months of* 1804, *&c.;* the latter, under the name of *Observations upon the Bulam Fever which has of late years prevailed in the West-Indies, on the coast of America, at Gibraltar, Cadiz, and other parts of Spain : with a collection of facts proving it to be a highly Contagious Disease.* As officers of high trust in the medical department of the Army, they have enjoyed unusual opportunities

of observation: the manner in which they have drawn up the respective accounts of their labours is highly satisfactory, and the accuracy of each work is fully confirmed by official documents. Sir James Fellowes, as long ago as 1795, had numerous opportunities of witnessing the pestilential fever which committed such ravages among the British soldiery of St. Domingo, and he describes the Peninsular fever as appearing under a similar form of malignity, and showing many of the strongly marked characters of the St. Domingo fever. His history of the origin and progress of the disease clearly points out that there is a real foundation for the distinction between fevers arising directly from the miasmata of marshes and decomposed vegetable matter, and those that are the offspring of human effluvia or specific contagion. The account furnished by Dr. Bancroft under this head is clearly proved to be erroneous, and his statements, deficient as they are in the most essential requisites, will have little weight when compared with the judicious relation of the Spanish Professor, Arejula. In his observations on the disorder called the Walcheren fever, which prevailed so fatally among the troops of Zealand in 1809, and after their return to Great Britain, and which disease, notwithstanding the volume of Pringle,* has most absurdly been pronounced by some writers† to be the yellow fever, Sir James maintains that it possessed no contagious property, at least no evidence existed that the complaint ever had been propagated or communicated to those in attendance upon the sick. "This fact," says he, "was confirmed by my own experience, and by the testimony of all the medical officers of the army." "On the other hand," adds Sir James, "the numerous facts which have been recorded of the contagious nature of the

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* Diseases of the Army.

† Vide the Medical Repository, &c.

pestilential fever of Spain are incontrovertible ; they are detailed with simplicity and truth, and they must speak for themselves."*

Dr. Pym, in his Observations, has attempted to prove that the fever of Gibraltar was the same as the Bulam fever, so happily described by the learned and distinguished Chisholm ; that it is a disease totally distinct from the bilious remittent fever of warm climates ; that it has no connection with or relation to marsh miasmata ; that it appears in the West-Indies only under peculiar circumstances ; that it is contagious, and under a certain degree of temperature may be propagated from one country to another ; that it attacks, in a comparatively mild form, natives of a warm climate, or Europeans whose constitutions have been assimilated to a warm climate ; and that it differs from all other fevers, in having its contagious powers increased by heat, and destroyed by cold, or even by a free circulation of moderately *cool* air. According to Dr. Pym, under the name yellow fever, have been confounded three fevers, which he considers as totally distinct. The agency of marsh effluvia, I have already observed, he wholly rejects as a cause of the Bulam, Gibraltar, or real yellow fever. This you will perceive is striking at the root of that most pernicious error that has been so zealously and so widely propagated in our own country as well as in Europe, notwithstanding the evidence of facts to the contrary, and the happy nosological distinctions made long since by such authors as Blane, Chisholm, Lempriere, Clark of Dominica, Steward, Bard, Wistar, and numerous other practical observers of undoubted veracity. For I believe you will agree with me, that from the want of a due discrimination on the part of many writers who have professed to describe the fevers of the United States, as they have prevailed in our sea-port towns and in different inland places of our country, have proceeded most of the dissentions that

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* Introduction, p. xxii.

have existed on this subject. This want of discrimination, too, may justly be considered adequate to the production of many of the histories of the diseases of America that have appeared, and in which we find fevers confounded arising from dissimilar causes, characterized by a different train of symptoms, and varying most essentially in the methods of treatment they require.* Dr. Pym's is no feeble attempt to counteract the influence which the unwarrantable opinions of Dr. Bancroft may have had in relation to this point.

But I have to solicit your attention to another important circumstance made known in the volumes of Dr. Pym and Sir James Fellowes, and to communicate which this letter has been written. Dr. Pym, who had the advantage of seeing the disease not only in Europe but in the West-Indies, contends, that the Bulam fever attacks the *human frame but once;* and supports this position by the strongest proof. I will not do injustice to his statements by attempting to abridge them. Irrefragible evidence is advanced by Dr. Pym, that the Gibraltar, West-India, or Bulam fever, (the malignant pestilential fever of Chisholm,) are the same disease. In a subsequent essay, Dr. Pym has enlarged on the subject of the disease affecting the human body but once.—I must be indulged in one or two extracts.

"At Gibraltar, during the prevalence of the disease in the years 1810, 1813, 1814, there was no well authenticated instance of a second attack: every person escaped it, who had

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* This language, I feel assured, will not be deemed too strong by those who impartially compare the different accounts of the fevers which prevail in the interior of our country, and more especially those that have made their appearance in the vicinity of lakes, with the histories that have been given of the pestilence or yellow fever as it has exhibited itself in New-York, Philadelphia, Boston, and other sea-ports and places within the United States. To consider the several kinds of fevers as grades only of one and the same disease, is a retrograde movement in medical philosophy.

had it at any former period : and this fact is now so well established there, that among the quarantine regulations against the introduction of the disease this year, (1815) *all the troops who have not passed it are encamped, while those who have passed it are doing the duty of the town.* At Cadiz, Carthagena, and Malaga, the fact of persons not being liable to a second attack of this disease, is considered to be as firmly established as it is in the small-pox."

"Two more proofs of the Bulam fever not attacking a second time, were in the 70th and 55th regiments. The first suffered severely from the disease in the West-Indies, in the year 1794, and returned to that climate from Europe in the year 1800, filled up with new officers, with the exception of six, viz. Col. Dunbar, Major Elliot, Captains Johnstone, Lawrence, Hutchinson, and Boat, who had had the fever at a former period in the West-Indies, and who now escaped it, although the corps buried ten of the newly appointed officers in a very short time."

"Upon a moderate computation, there were *one hundred and fifty* officers (civil and military) at Gibraltar, who had not had the disease before, and twenty-five who had passed it in the West-Indies ; and making an allowance for one or two doubtful cases, where the disease was so mild as not to confine the patient to the bed, one hundred and forty-five at least out of the one hundred and fifty were attacked by it, while every individual of the twenty-five who had it before escaped it ; proof positive that the Gibraltar, West-India, or Bulam fever, are the same disease, and that the human frame is not liable to be attacked by it a second time, even after a lapse of ten years." *Appendix to Dr. Pym's Observations.*

This same peculiarity marked the pestilential fever of Spain. According to Sir James Fellowes, it never has been known to attack the same person a second time in that country. "This fact," says Sir James, "which was first observed by the native practitioners, has now been confirmed by

the experience of several years, and by the concurrent testimony of all the surviving inhabitants of those places, where the disorder had most prevailed." *Introduction, p.* xxiii.

I have dwelt so long on the performances of Sir James Fellowes and Dr. Pym, as almost to be deterred from referring to any other authority; yet I cannot forbear making a short extract from an account of the epidemic fever which occurred at Gibraltar, in the years 1804, 1810, and 1813, and for which the public are indebted principally to Dr. Gilpin, one of the inspectors of the hospitals. The paper throughout is one of singular merit, and eminently calculated to do away the doubts of the sceptical, and strengthen the faith of the wavering. It is gratifying to the philanthropist to read the answer given by Dr. Gilpin to the eighteenth query, addressed to him by the Medical Board of the army.

The points embraced in this query involved the consideration of several matters, to wit: were many of the attendants of the sick in private houses and hospitals attacked with the same disease, and where this did not happen, were there any circumstances evident that might have rendered such persons unsusceptible of the contagion; such as their age, previously having had a like disorder, particular precautions, &c. ?

"In private houses, in most cases," replies Dr. Gilpin, "the attendants were attacked. There were undoubtedly many exceptions in the hospitals; but it was to be accounted for, as, generally speaking, the attendants were persons who had had the disease previously either in the West-Indies or in Spain, or here, in 1804. At the commencement of the disease last year, it was calculated that there were about five thousand persons within the walls who had previously passed through it; and after careful inquiry, there does not appear to be one well authenticated case of a person's having received the infection a second time. I heard, indeed, of three or four; but as the nature of the previous fever could not be exactly known, these exceptions have but little weight in so momentous a question. The exemption from a se-

cond attack, I am credibly informed, is firmly believed in Spain. At Cadiz, last year, though the fever put on the very worst symptoms, and destroyed the patient frequently in forty-eight hours, the deaths did not exceed, in a population of upwards of seventy thousand, fifty a day ; and these were chiefly strangers. The Spaniards are so fully convinced they cannot receive the infection a second time, that having passed the disease is matter of great rejoicing among them: a medical certificate of the fact, is a sufficient passport into an infected town, which they enter without the smallest apprehension." Consult the Transactions of that active and distinguished association, the Medical and Chirurgical Society of London, vol. 5, for more ample details.

The immunity of the constitution from a second attack of yellow fever, is a peculiarity so strikingly characteristic of most disorders of anacknowledged specific nature, and of such great practical interest both in a social and political point of view, that it is extraordinary it should have met with so little notice before Professor Arejula made mention of it in the year 1806. " The yellow fever at Andalusia," says Arejula, (I avail myself of the translation of his account in *Sir James Fellowes' Reports, p.* 67.) " attacks persons but once in their lives, and it is of great importance to the physician to know this, in order to form his prognosis and his plan of cure, as well as for the individual who may have passed through this disorder, that both of them being assured of this fact, may step forward without fear to the relief of their fellow creatures who may hereafter be afflicted with so dreadful a malady." Dr. Pym, however, enjoys the reputation of being the first English physician who promulgated this principle. I have not the sources of information on hand to enable me to determine how many of the writers on the malignant fever, as it has prevailed in our country, have entertained this opinion, though I well recollect Dr. Lining to have been one ; as may be seen in his account of the fever in Charleston, published more than sixty years ago in the Edinburgh Physical and Literary Essays, volume second. In the

interesting correspondence on the yellow fever which was maintained a short time anterior to this period by Dr. John Mitchell, of Virginia, and Lieutenant Governor Colden, of New-York, nothing is alluded to from which we might infer their knowledge of this law of the disorder. See the American Medical and Philosophical Register, vol. 1st. and 4th. In the Facts and Observations of the College of Physicians of Philadelphia, on the nature and origin of the pestilential fever, after establishing the identity of the yellow fever which existed in that city in 1793, 1797 and 1798, with the West-India pestilence, the College state, that it is a circumstance that deserves particular attention, that "very few, if any, of the Creole French in this city, [Philadelphia,] suffered from the contagious malignant fever which prevailed here in 1793, 1797, and 1798, though the disease was introduced into their families; and children born in this country of Creole parents, died with it last autumn, while the parents and the children born in the West-Indies were entirely exempt from it." We look in vain, if my memory serves me, for any thing of the same sort in the Additional Facts and Observations a subsequent publication of the College of Philadelphia.

In the Sketch of the Malignant Contagious Feveras it appeared in the same city in 1793, Dr. Cathrall observes, "it does not appear to affect the same person twice. Although careful inquiry," adds he, "has been made by several of my medical friends and myself, it only appears that some of the patients had a slight relapse of fever, but without any of the distinguishing symptoms of the disease, and very soon recovered." It is much to be regretted, that the several histories of this disease published by that able medical annalist, the late Dr. Rush, should have been so confused and unsatisfactory on so momentous a matter. In his account of the bilious yellow fever of 1793, you will, nevertheless, find that the refugees from the French West-Indies "universally escaped the disorder," though this was not the case with the natives of France who had been settled in the city. On the

other hand, Dr. Currie, of Philadelphia, in his treatise on the Synochus Icterodes, states, that several instances occurred of the disease affecting the same individual a second time, and under circumstances so unequivocal that it could not be *fairly* ascribed to a relapse. This assertion, you will see, is not strongly made, and may be deemed rather matter of opinion than matter of fact.

Dr. Currie also tells us, that the French West-Indians, particularly those from St. Domingo, almost to a man, escaped the disorder, though they made use of no precaution for the purpose, "while those from France were as liable to it as the Philadelphians." Nothing in relation to the security from a second attack of the disease is advanced by the late Professor Bayley, in his excellent volume on the Epidemic Fever of New-York, in 1795; though in the Collection of Papers published by Mr. Webster, this writer on the epidemic of New-York, of the same year, alleges that he knew not a decided instance of an individual labouring under a second seizure.———But at present I am not duly prepared to enlarge on this point, by reference to other American authorities.

Dr. Pym has referred me to a passage in Sauvages on this disease, in which it is asserted, that it operates upon the constitution but once. *Typhus icterodes* contagiosus est. Albos tantum, maxime peregrinos ex regionibus frigidis advenas, Indos, Hybridos, mulatros omnes, exceptis infantibus, una tantum vice afficit: nigri vero ab eo morbo nonquam afficiuntur." See Nosolgia Methodica, tom. 1. p. 316, of the quarto edition of 1768. We must here bear in recollection, that Sauvages has depended mainly on Lining, as authority for this peculiarity. Does your own extensive experience in the malignant epidemic of New-York, agree with the opinion that the human constitution is invulnerable to a second attack of yellow fever, corresponding in this respect with small pox, and other specific disorders? In answer to this question, which has frequently been put to me by practitioners of medicine in England, I have uniformly ventured to

assert that it holds good as a general fact. Those who have once had the disease are certainly *less susceptible* of its influence a second time.

Permit me now to make known to you the important results of the recent deliberations of two of the most distinguished medical associations of this kingdom. The decisions of the Royal College of Physicians of London and of the Army Medical Board are at length brought to a close. These two learned bodies, alike distinguished for scientific attainment and practical knowledge, have been for a considerable time past devoted to a consideration of all the facts connected with the nature and character of the yellow fever, particularly as it has of late years appeared in Spain. The Royal College have pronounced that the yellow fever is a highly contagious disease, which decision they have reported to the Lords of the Privy Council. With respect to its attacking the human frame but once, they say they think it *extremely probable*, but that upon a point of such importance they cannot venture to give a decided opinion. The Army Medical Board, at the head of which presides Sir James M'Gregor, have also given it as their opinion, that the yellow fever is in its nature contagious; and they further add their conviction, that the fever of Spain is not only strictly contagious, but like other disorders of a specific character, it affects the human frame but once. I have been kindly favoured with an abstract of these proceedings, and I herewith enclose an extract from the official report on Dr. Pym's publications made by the Army Medical Board. The operation of climate, soil, and other local causes, in adding virulence to febrile contagion, may be considered almost an axiom in physics; and the necessity of a strict adherence to your improved system of quarantine laws, and all municipal regulations for the purpose of domestic cleanliness, cannot be too strongly enforced. On this subjcct the Royal College and the Army Medical Board are united in opinion.

(COPY.)

EXTRACT FROM THE REPORT UPON DR. PYM'S PUBLICATION BY THE ARMY MEDICAL BOARD.

Army Medical Board Office, 6th May, 1816.

"It is due to Dr. Pym to state, that we consider him to have been the first English medical man who promulgated the opinion, that the disease in question (the Bulam fever) is capable of attacking the human frame but once; and if that opinion be correct, which we believe it to be, it is certainly an important fact, and led Dr. Pym to employ those persons as attendants on the sick, who had undergone the disease, and therefore were not likely to be affected by the contagion of it, and thus probably saved many lives. Under these impressions, we beg leave to recommend the industry and research displayed by Dr. Pym, in his book, to Lord Palmerstone's favourable consideration.

"Signed,

"J. M'GREGOR,

"W. FRANKLIN,

"W. SOMERVILLE."

The advocates for the unity of disease will, I believe, find it insuperably difficult to reconcile with their theory, the facts which I have thus hastily communicated to you; while the fundamental principle, that there is a radical difference between remitting fever and yellow fever, between fevers depending upon marsh miasms as their source, and those that take their rise from human contagion; in short, that yellow fever is a distinct idiopathic disease, acquires additional support. It may not therefore be of disservice to make known the purport of this letter. The doctrine maintaining that different fevers are of one common origin, is in reality so unfounded in fact and so pernicious in its consequences, that the sooner it is discarded, the better it will be for the interest of science and humanity.

Before I conclude, permit me to add a few lines on a sub-

ject not wholly foreign to the object of this letter, the *plague*. The account of the origin and progress of the plague in the island of Malta, in the year 1813, drawn up by Dr. Calvert, physician to the forces, and printed in the 6th volume of the Transactions of the Medical and Chirurgical Society of London, is a document of great value. The reasoning of the author, deduced from the evidence which a faithful narrative affords, seems to be very satisfactory.

Contact, he maintains, is the most certain mode of communicating the disease, but he is inclined to deny that it is essential to the propagation of the contagion.

"It appears to me," says Dr. Calvert, "that this contagion or principle of plague, is diffusible in the atmosphere to a distance greater or less from an infected body, according to the climate and season of the year, and possibly to other peculiar states of the atmosphere, with which we are unacquainted; that in the spring or summer season a single infected person is sufficient to contaminate the air of a whole city; and that those who happen then to be exposed to febrile causes, or otherwise predisposed, are the first to become its victims. That these newly infected persons generate a fresh supply of poison, increasing its strength and influence, till at length it becomes so powerful, that nothing but the winter season will entirely put a stop to it."

The various reports that have been so industriously circulated concerning the contagiousness and non-contagiousness of the plague, especially as it prevailed in the army of the East, and the unfair and contradictory statements that have been made relative to Baron Desgenettes, induced me, while in Paris in the spring of 1816, to seek an interview with that gentleman, in order to ascertain the truth on this interesting subject. Dr. Delile, the companion of Dr. Desgenettes as a member of the Institute of Egypt, accompanied me. What practical advantage may arise from inoculation for the plague we are not yet able to state; that the experiment is not without great danger is sufficiently well ascertained. The Baron distinctly declared that it had ever

been his settled opinion that the plague was a contagious disorder ; that his extensive experience as an officer of the medical staff, had only served to confirm him in that opinion ; and, further, expressed much surprise, that any account should have been made public representing his views in a different light. The Baron inoculated himself with the matter of plague, though he felt persuaded that the disease was of a specific character, and had almost hourly evidence of its contagious effects : but more fortunate than the incredulous Whyte, he did not fall a victim to the experiment.

I am aware how confidently and unblushingly the case of Dr. Whyte had been denied. So far, however, from any doubt being entertained by the medical philosophers here, as to the accuracy of the statement of his inoculating himself with the matter of plague, it is well known that his preconceived notions of the nature of that pestilence, were the cause of his rashness and premature death. Of this I have been assured by personal communication with Sir Gilbert Blane and Sir James M'Gregor.

When I took pen in hand, I did not expect to produce so long and tedious a letter. My apology must be the nature of the subject, interesting beyond all others to an American physician.

With due respect, I remain, dear Sir,

Your friend,

JOHN W. FRANCIS.

Dr. DAVID HOSACK, New-York.

Art. V. Remarks *on the* Diseases *of the* Females *of several* Indian Tribes *west of the Mississippi: in a letter to* John W. Francis, M. D. *Professor of Midwifery.* By John D. Hunter.

Dear Sir,

I now send you, agreeably to promise, my observations, which you will receive with all due allowance. They are gathered during a residence of many years among the people whose manners I have attempted to describe. It is well known that there is much difference between the diseases of savage and civilized life. Perhaps you will perceive, from what I now write, a difference no less striking in the respective methods of cure. At all events, I indulge the hope that I may have advanced something in this communication, which may interest you as professor of obstetrics.

I shall, by way of introduction to the present subject, offer a brief notice of the habits peculiar to the females of savage life, and the influence those habits exercise on their health.

The domestic labour of Indian life devolves almost entirely on the female. But the custom, in this respect, differs essentially among the various tribes, and is accommodated to the various circumstances in which they are placed. Those tribes, for instance, who are well settled, and live most distant from the encroachments of their enemies, have most domestic drudgery to perform, yet are, in a measure, free from much of that labour and fatigue which the more roving tribes are subjected to. The former tribes are better calculated to increase in numbers, both from their more certain supplies of food, &c. and from their greater security from their enemies. Those of the latter class have little or no anxiety about the wants of to-morrow, and are never long enough in a particular place to become tired of

it, but enjoy an almost continued novelty from constantly roving from one region to another.

There might, at first view, seem to be a decided balance in favour of that situation wherein the supply of food is more certain, and where the inhabitant is enabled to acquire those conveniences from which the other is entirely precluded. This, however, is true only to a limited extent; the former are exposed to many wants in their more settled life, which nothing but civilization and improvement in the mechanic and liberal arts can supply: they suffer much from the varied haunts of the game, and are compelled to leave their homes several months in the year, during which time their women and children are frequently carried off captive by their enemies. No persons, however, enjoy more freedom from disease than those who are thus situated; and their mere ordinary employments, while they supply the means of subsistence, tend greatly to promote and improve the health.

MENSTRUATION.

I shall now speak of that great change in the condition of the female constitution, which is ever regarded, by the Indians, with superstitious horror in the one sex, and of such extreme moment by the other. This, however, is not to be wondered at, when we advert to the great pain, and even danger, which often attend any interruption of this salutary function. They can, for the most part, readily foresee at what time the menstrual period is about approaching; and, accordingly, make the requisite preparations for the same. The female thus circumstanced, repairs to a house or lodge at some distance from the wigwam, and continues there during its flow. I believe this is always accompanied with more or less of pain; it makes a great change in the life of the girl, and they now say she must be done with children's things, and be a woman. This is now the age at which they

are considered suitable companions to go in company with the squaws, to get wood, drive up the horses, to pack in the meat killed by the hunters, to cultivate the corn, beans, pumpkins, &c. dress robes, make mockasins and leggings for the men, while previously their principal business was roving about collecting shells, flowers, &c.

They seldom exhibit evidences of puberty before the age of sixteen years, which gradually announces the approach of the catamenia ; this state prepares them for child-bearing. They usually suffer some change of complexion, an increase in the size of the breasts, and shooting pains through various parts of the body and limbs. Menstruation scarcely ever happens earlier than at the above period. While suffering from menstruation, they never associate with the men, nor prepare any thing for their accommodation ; though, in this respect, some are more scrupulous than others.

The first time an Indian woman becomes pregnant, which is seldom under the age of twenty, she is commonly somewhat peevish and fretful, and frequently indulges in strange whims and fancies. I have never known more than one or two deformed infants among them ; and never an instance of marks being on different parts of the body. Giddiness or vertigo is one of their troublesome symptoms during pregnancy ; pains of the head, back, and limbs, also occur. Another symptom often very troublesome, is acidity, heartburn, or other derangement of the stomach. Much more, I doubt not, might be said on this head.

On the approach of delivery, she goes to the cabin prepared for the accommodation of the women, in company with her best friend or her mother, and very seldom with more ; sometimes in a few hours she is relieved of her burden ; sometimes labour is more lingering, particularly in case of a first child.

The Indian females have an advantage over those of civilized society, in having easier and shorter labours, and in being able to return to their ordinary pursuits much sooner.

I do not know, however, that they have less pain than the healthy and robust white females who live simple and temperate lives on the frontier settlements. Though I have known cases of deformity more frequent among the frontier whites than among the neighbouring Indians. I have known frequent instances of doublets, and one of triplets, among the whites in the back settlements, but never but one or two cases of twins among the Indians, and never a case of three at one birth. They make use of unctions of bear's oil, or of fat of the buffaloe, to anoint with.

The lodge prepared for the accommodation of the parturient Indian is provided with a mat laid on a kind of frame made of forked posts driven in the floor, and poles laid on the forks. On this robes of buffaloe skin, or blankets, are placed for her accommodation. Her companion performs the duty of accoucheur. After delivery, the child is taken proper care of by the friend of the patient, who, having cut the cord, washes the infant abundantly with cold water, imbued with sassafras, &c.

They always procure a nurse whose child is near the age of the infant just born, whom they employ for two or three days until the mother is competent. When the mother has recovered herself, all her intimate friends go to wish her well; she then returns to her family, though, for the most part, not without having bathed herself.—They seldom die of childbirth; the cases I have mentioned are what I call natural births. But there are instances where they linger for a day or more; and sometimes they suffer the most excruciating pains and tortures, during which the old women administer their bitters, teas of dittany, &c. and, I believe, frequently do much good by their remedies.

There is seldom or never any need for the doctors to interfere in these cases; though this is different among different tribes, as among the Chippeways and Bicaras. I have known the Indians to make use of many foolish charms to prevent disease, which they believe to be inflicted through

the agency of the evil spirit; whom they think to be very much intimidated by the eel's liver: this I have known to be given in these, as well as in other instances. If the lochial discharge continues too free, or too long after the milk begins to flow, they dig up the placenta, or after birth, and bury it in another place.

OF THEIR NURSING THEIR CHILDREN.

The Indians bestow little attention on their children, more than to supply them with sufficient nourishment for their health and comfort. and to protect and preserve them from injury, and the vicissitudes of the weather. They seldom, I may almost say never, give them animal food until they have teeth sufficient to masticate it well. During the sugar-making season, they give them sugar and syrup, which well agrees with them; they keep their children to the breasts from eighteen months to two years. Their children do not cut their teeth until they are a year old, and they do not suffer as much as white children during dentition. Their food being more simple, renders them, as I suppose, less irritable during their state of infancy. They seldom or ever eject their food in a curdled state. Their accommodations as to nursing are extremely simple. The child is confined to a piece of bark of a large tree, or board; a soft piece of buffaloe or bear's skin, is laid on the board for the infant to lie on. The child is confined by two bands, made, most commonly, of the long, soft hair of the buffaloe. Here, by the side of a tree, or in the wigwam, the infant is kept for hours together, while the parent may be gone for miles in quest of wood or fruit. The mother will sit with the utmost composure and hear her child cry without attempting to pacify it, when she is certain her offspring is well. They say that crying is good for the child; "it will make him grow," and he will stop when he gets tired. It must not be inferred from this, that the Indians are indifferent to the comforts of their offspring, or that they are destitute of pa-

rental affection. The extreme anxiety and solicitude which they manifest when their children become sick, or are accidentally injured, proves the reverse beyond a doubt. Let their families be in danger from an enemy, or exposed to fire, &c. and I venture to say the strength of the parent's affection is shown in proportion to the danger which threatens the safety of the offspring.

DISEASES OF LACTESCENT WOMEN.

In long continued journies, the women frequently become enfeebled from suckling their children, as also from fatigue, hunger, exposure, and other causes. This brings on a discharge of a white appearance from the genital parts ; and the men will at such time have no connection with them. This discharge frequently continues a great length of time, and if it does not yield to remedies, great loss of strength, night sweats, and wasting away, follow, and they are reduced to the appearance of a skeleton. If they wean the child, they often get better, and sometimes recover ; but after this they seldom or ever again have children. They are in fact less prolific than white women, and seldom have more than four or five children ; and the interval of births are for the most part, three or four years. To please the child, they peal the bark from the body of a suitable tree, while the sap is up, and split it in halves, and lay the infant in it when it is restless. This enables it to be rocked, and thus affords the accommodation of a cradle.

I shall now make a few remarks on their method of treating diseases peculiar to females and infants, that is, children at the breasts.

DIFFICULT OR PAINFUL MENSTRUATION.

This is treated by puking, strong harsh purging, and stimulating roots and herbs. One of their favorite drugs of this character, is a strong tea made of dittany, mountain tea, and wild ginger. Of this drink they take very freely three or four times a day. Where there is much weakness, which

is sometimes the case, accompanied with loss of appetite or palpitation of the heart, they give the puccoon root (sanguinaria Canadensis) in very small quantities, united with slippery elm tea, (ulmus Americana;) I cannot say with what success, though I believe they place much confidence in its emmenagogue properties. They use liberally sudorifics in this complaint, and carry them at times to an injurious extent. They expect most benefit from their remedies when they apply them about the time they suppose the discharge is about to commence, or a few days previous. They heat large stones, lay bitter herbs on them, then pour water on them, and wrap them in a blanket or buffaloe robe. They are so placed that the steam from the rocks and herbs may come in immediate contact with the seat of the disease. They place great confidence in these means as a method of cure. They also use the colt's foot and deer's tongue in this complaint.

FLUOR ALBUS OR WHITES.

This is a disease which I have often heard mentioned as existing among the degraded Indians who live near the frontier settlements, who are addicted to habits of intemperance, and also among such as inhabit wet, marshy, sickly places, and have become emaciated.

They have many remedies for this complaint: they bathe the whole body, and make liberal use of local washing. They make great use of the bark of the sarvas tree, and sour wood; they use a strong infusion of the red root, with the rust of iron, or something similar put in it, which they obtain from the cliffs of rocks on the banks of the rivers, and salt licks. This wash has a great power in stopping the discharge for a while, but they say it will return again.

When the patient labouring under this disease is suckling a child, she facilitates the cure by weaning the infant sooner than she otherwise would have done. They also use the puccoon in this complaint in combination with sweet gum.

I know nothing of its value in such cases, or how much it merits their confidence. Snake skins are sometimes worn girdled round the waist, to relieve them. This is also a remedy for painful menstruation. The Indian female considers the whites as one of the most troublesome disorders, though not in itself dangerous, and they omit no means in order to get rid of it as soon as practicable: their husbands have no connexion with them while they are in this condition.

FLOODING.

This is a disorder which sometimes happens among the female Indians, and from other causes independent of those connected with parturition or abortion. I have witnessed, after long and fatiguing journies, or from heavy burdens, this affection to come on when the female has been compelled to desist from travelling or other business in which she may have been engaged. Their remedies in these cases are not few in number. Some are the same as those used for the preceding discharge I just noticed. But their chief remedy is cold, and when they succeed in arresting the hæmorrhage, if the patient be much prostrated, they give her strengthening articles. While the discharge continues, they keep the patient lying on her back, and frequently wrap a buffaloe robe or something of the kind under the small of the back, so as to raise those parts above the level of her head. One of the means of cure is to take a large bunch of fine moss or wool, dipt in very cold water, and apply this immediately to the bleeding parts. They also make use of ice. They apply cold externally by means of skins or pieces of blanket wet in very cold water placed over the patient's abdomen. This often answers their best wishes.

DISEASES OF CHILDREN.

The diseases of the Indian children are few, compared with those of civilized life. *Irritations of the bowels* sometimes occur, yet they are not at all frequent; and they

have immediate means for relief in a prescription made of burnt muscle shells, powdered and given in dittany tea. *Diarrhœa* is another of their infantile disorders; they have many ways of curing it. The before mentioned means for removing the irritations of the bowels, is one of them: gentle sweating and purging are also thought much of by them for this purpose.

Diarrhœa, or an extreme looseness of the bowels, is an affection which exists, particularly in the summer months, when there is an abundance of acid fruit, and which they greatly indulge in before it is ripe. They think that purging will carry off the complaint, and accordingly use means for this end. Sweating they also consider among their remedial measures. Sometimes they plunge the patient in the river, which I have thought has now and then been of great service.

CROUP.

This is one of the most distressing complaints which occurs among the Indian children: it often proves fatal, and that in a very few hours. The disorder comes on for the most part suddenly, and after cold and damp weather. They look with alarm upon its first appearance, and it is not without very just reason that they do so; for no disease to which their infants are subject proves a greater source of inquietude. The little patient gets its breath with great difficulty and labour, and seems to be tortured with continued efforts to retain it; and this, besides, produces a rattling sound or kind of wheezing which may be distinctly heard for several yards from the sufferer.

They almost uniformly have recourse to emetics; they puke the child as the first thing to be done, as this is accomplished by the Indian physic, (sanguinaria Canadensis) or crow's foot, or yellow root, or podophyllum peltatum. They next immerse him in the vapour arising from hot stones, which they confine to the body of the child, by spreading a blanket or buffaloe robe over him when they are not within

a convenient distance from the sweat house ; they also give pretty warm sweating teas. I have known them to excite vomiting by running a soft feather down the throat of the patient, for the purpose, as they say, of bringing away the phlegm, which they think makes him breathless, or to breathe hard. When they die of this complaint, they usually go off convulsed, with very distorted features, and much apparent agony. Their mothers support them in an upright position, so that the little child thus affected may breathe in the most favourable condition. Their death is a hard struggle, and they seem to die exhausted. I do not think, from all the information I can obtain, that your practitioners among the whites have a greater dependence on emetics in this singular disease than the Indians have.

WORMS.

I question whether the Indian children are as much troubled with worms as the more puny children of the whites. I believe the more sickly the Indian children are, the more they are likely to be troubled with this complaint. This is an evil, however, which seldom proves serious : the Indians are generally successful in destroying them ; and for this purpose they give active purges, and teas of different kinds of roots and herbs ; as the star root in the form of tea, yellow root, and the magnolia : the puccoon is also at times deemed a good remedy.

The seeds of wild cherries are pounded and put in warm water : this is given to children as a puke, and also as a purgative.

I shall bring this communication to a close ; having extended it to a greater length than I originally intended. Several topics I might perhaps have more fully and satisfactorily treated, particularly the subject of menstruation, and the period of gestation. You will overlook the inaccuracies of my style, and place, with perfect fullness, reliance on the

facts I have stated. I have seldom indulged in an observation, the accuracy of which I was not perfectly aware of. The Indians are commonly very reluctant in communicating a knowledge of their remedies to any strangers, unless they have the greatest confidence in them, except to the members of their own particular tribes. They consider the healing art a great secret revealed to them by the *Good Spirit*, who visits them during their sleep. These supposed revelations, however, I consider as nothing more than ordinary dreams, but which they always look upon as ominous. It is somewhat strange that the impressions made during their sleeping hours, should enable them to find with so much accuracy their wished for objects, whether it be medicine for their maladies, or game for their support, or a spring of good water when they have been travelling a great way, and know not where to procure a supply.

It is, I repeat, seemingly strange to the hunters and traders who go among the Indians, and are induced to believe that they actually have some mysterious intercourse with supernatural beings. It proceeds, however, from a want of more minute attention to their habits and manners; when these are understood, the charm ceases, and the sleeping impression, which always or generally is the picture of some prairie or fine grove abounding in game, or some pure stream of water, &c. being awakened in the mind by previous information, he pursues the wished for good with unabated ardour until he finally succeeds: while on the other hand, the trader, less accustomed to this mode of life, to the courses of the waters, the haunts of game, &c. becomes discouraged, and ascribes the superior success of the Indians to some superior knowledge of events out of sight. Thus they wish to make the ignorant whites, who occasionally visit them, to form an exaggerated estimate of their knowledge; so it is with their remedies; yet it may be said, that the Indians very generally place great reliance in dreams.

Accept, Dear Sir, what I have thus written; and if it shall contain any thing novel or interesting to you, I shall number those among my well spent hours which I devoted to writing it.

Your friend,

JOHN D. HUNTER.

Dr. J. W. FRANCIS.

ART. VI. FACTS *relative to a* DISEASE *generally known by the name of* SICK STOMACH *or* MILK SICKNESS. *Communicated in a letter to* JOHN B. BECK, M. D. By Dr. LEWIS C. BECK.

THE last number of that valuable work, The Philadelphia Journal of the Medical and Physical Sciences, contains three communications, two of which are extracted from the Western Quarterly Reporter, on the subject of a singular disease, commonly known in the Western States by the name of Sick Stomach, Milk Sickness, &c.

The following facts, collected during my residence in that part of our country, may throw additional light on this subject, and are submitted entirely to your disposal.

The disease prevails in the vicinity of St. Louis, and St. Charles, in the state of Missouri; and Edwardsville, in Illinois. It is confined to the low lands about the confluence of the Missouri and Mississippi Rivers, and has not hitherto been observed on the "bluffs," or highlands. These lands are in many places heavily timbered, and are subject to annual inundation.

The first appearance of this disease in cattle, is observed by their noses being parched and turned out. If while in this situation they are driven, they frequently fall down, and either expire instantly, or remain for some time unable to move, and apparently in great pain. Should they survive the first attack, they are shortly after seized with violent nervous affections, accompanied with a weakness of the

limbs, and a complete prostration of strength. These symptoms, however, rarely appear, except after the animal has been heated by exercise. Horses frequently fall dead in the middle of a prairie, leaving the traveller to make the best of his way on foot; and cows have been known to expire in consequence of having been driven from the pasture to the barn yard.

The disease is not always fatal; for some animals have been afflicted with it during several seasons, and have finally recovered. Others are affected so slightly, that its symptoms only appear after the most violent excitement.

A few cases have occurred in the human subject, although they are much rarer about St. Louis and St. Charles, than in other parts of the country. Excessive vomiting is a prominent symptom; in other respects the disease assumes the form above described.

In that section of country, the cause of the disease is generally supposed to be a poisonous plant. Those who eat the flesh or milk of cattle thus affected, are said to take the disease. And whether this be true or not, it is so firmly believed in St. Louis, that the trustees of the town, during the last summer, cautioned the inhabitants from purchasing butter made in the infected district. This disease has also been observed in many parts of the state of Indiana; near French Lick, on the main road from Louisville to Vincennes, it prevails to an alarming extent. It is worthy of observation, that while the lands on the Missouri and Mississippi above referred to, are low, rich, occasionally covered with a thick growth of timber, and annually subject to inundation, they are here elevated, hilly, and frequently consist of barren "knobs," entirely destitute of vegetation. In fact, the character of the soil or surface in these two situations is diametrically opposite. In the former also, the inhabitants are subject to intermittent and bilious fevers, whereas in the latter they are uniformly healthy.

In the district of country last mentioned the disease is called the "*Slows*;" a name by no means inappropriate, as those

who are afflicted with it are obliged to be very slow and cautious in their movements, in order to prevent a recurrence of its painful symptoms. The disease at first appeared in horses, cows, hogs, &c. Dogs are also very subject to it; so much so, indeed, that in the whole neighbourhood at French Lick, there is scarcely a single one free from it. Frequently while following their masters, particularly if the weather is warm, they fall down apparently lifeless, in which state they continue for a few moments, and then resume their journey.

In every case where animals who have died of this disease have been dissected, the heart and aorta have been found greatly enlarged, and their inner coats sloughy.

In the human subject, the symptoms are similar to those in brute animals. Persons who are affected with the disease, if they wish to remain comfortable, are obliged to keep themselves perfectly quiet. Upon the least exertion, they suddenly lose all muscular power, their limbs are unable to support their bodies, and they sink down in a state of complete exhaustion and stupor. They soon, however, recover from this state, and remain comfortable until the next excitement.

Dr. Austin, an intelligent physician residing in the vicinity of the 'Lick,' informed me of the case of a lady whom he had seen during the last winter, who died of this disease. She had been affected in the manner above described for upwards of two years. For several days previous to her death, the unhappy victim was unable to move without the greatest pain; her respiration became gradually more and more difficult and painful, until at length suffocation put an end to her sufferings.

The same gentleman related the case of a young man, who was during the last winter suddenly attacked with the disease, while engaged in hunting; he fell down in a state of insensibility, and as the weather was cold, must have perished, had it not been for a fire that had accidentally been kindled in the woods.

In these two cases the disease was not attended with the

excessive vomiting, and the nervous affections, which are usually observed. Those symptoms, however, have occasionally appeared, but are by no means alarming.

I shall now briefly notice the causes to which this extraordinary disease have been ascribed.

A Poisonous Plant.—In the neighbourhood where the sick stomach has prevailed, it has generally been ascribed by the inhabitants to the above cause; and they have been confirmed in this opinion by the observations of some intelligent physicians. Although it is not my present intention to enter into a discussion on this subject, I shall mention a few facts which appear opposed to this hypothesis. 1st. On the Mississippi, the plant which is said to produce the disease is a species of Cicuta, (cicuta maculata, L.) growing in the low and wet grounds. I have not ascertained whether this plant is found at French Lick, but from the appearance of the country, it is probable, at all events, that it is not very abundant. 2d. By referring to botanical authors, we find that this plant is common in wet meadows and ditches, from New-England to Carolina, and still no cases of this disease have occurred to my knowledge east of Ohio. 3d. At French Lick, dogs were affected with the disease, previous to the death of any cattle whose flesh they could have eaten.

A Poisonous Mineral.—In the mine counties of Missouri, a disease prevails among cattle, called the "Mine Sickness." Mr. Schoolcraft, in his Views of the Lead Mines, observes, "Cows and horses frequently die without any apparent cause. Cats and dogs are taken with violent fits, which never fail in a short time to kill them. This has been accounted for by supposing that they inhale the sulphur which is so abundantly driven off in smelting lead, and cattle are often seen licking about old furnaces. It is more probable that it arises from the sulphate of barytes, which accompanies the lead ore. This consists of sulphuric acid united to barytes—*a poison to animals.* The mine sickness is wholly confined to quadrupeds."

It is supposed by many, that the disease here mentioned is the same which prevails near St. Louis, and that it is there caused by some mineral substance mistaken by cattle for salt.

In favour of this they adduce the fact, that no cases have occurred, which could not be satisfactorily traced to a circumscribed district about the mouth of the Missouri.

A peculiar state of the Air.—This is generally considered as the cause of the "*slows*," by the physicians and inhabitants at French Lick. It is observed that the disease is not produced in the human subject by eating the flesh or milk of animals affected with it, for it appeared in the former about the same time that it appeared in the latter. From this it is inferred, that it is originally produced in both by the same cause. Dr. Austin informed me, that while the cows in the neighbourhood were affected with it, their milk, and the butter made of it, were used, without producing any ill effects. The family of the female whose case is mentioned above was numerous, and had the disease been caused by improper food, it is not probable that she would have been alone affected.

It should be remarked, that an opinion is also prevalent, that if cattle are kept from going out previous to the falling of the dew, they are never affected with the disease.

I shall conclude this desultory epistle, with the request that you will at some future time favour me with your opinion as to the cause and treatment of this singular disease.

Yours,

L. C. B.

Albany, August, 1822.

Art. VII. Facts *on* Vaccination. By James M. Pendleton, M. D. *and* J. Smyth Rogers, M. D.

To the Editors of the New-York Medical and Physical Journal.

Gentlemen,

If you think the following results, drawn from the practice of about five hundred vaccinated patients, present any circumstances worthy of record, you will confer an obligation upon us by giving them a place in your Journal. They present some peculiarities, which, although not calculated to throw any additional light on the anti-variolous power of the Cow Pox, may yet furnish some points of interest to medical readers.

Dr. Jenner, in the course of his laborious investigation of this disease, has drawn some general conclusions from his practice, which do not agree altogether with the facts which we here noticed. He states, in the first place, that in Cow Pox, the eruption never occurs but in the place where the virus is applied: we have had one case which furnishes an exception to this rule.

Mary Gallagher, aged 8 years, residing at No. 99 Crosby-street, was inoculated on the 2d of March; the vesicle proceeded through its regular stages, and toward the period of its decline, two more appeared on the back; these were succeeded by two more around the elbow, and went through their regular stages; the efficacy of this vaccination was tested by a re-inoculation. This was the only case presenting this peculiarity which we had. In a conversation with Dr. Post, he informed us that he had met with one case of a similar nature, where vesicles going through their different stages appeared on different parts of the body. Dr. Jenner observes, secondly, that the Cow Pox, under the most unfavourable circumstances, never proves fatal: the following case will show that a fatal termination does some times take place.

Harriet Ann Ross, aged 6 weeks, at No. 40 Augustus-street, was vaccinated on the 7th of May; about the period at which the constitutional symptoms showed themselves, an erysipelatous inflammation appeared around the vesicle, extending over the arm, and involving the head and chest; it continued to increase, until it included the lower extremities, when the child sunk under the irritation it produced. From an attentive consideration of the circumstances of the case, and the appearance of the vesicle, we were led to conclude, that its unfortunate termination was to be ascribed to a peculiar irritability of constitution, rather than to any morbid condition of the virus. Woodville, in the course of vaccination of an equal number of patients, mentions one case having proved fatal, but does not mention the manner in which death was produced.

The following varieties in the appearance and state of the vesicle we have noticed, and found not to affect the success of the vaccination. 1st. The vesicle will anticipate its regular period, and go through its different stages in a shorter time than usual. Case 1st. John Conroy, aged 9 years, 95 Mulberry-street, was vaccinated Jan. 13th, 1821; on the third day the vesicle was completely formed, and filled with transparent lymph; a number of patients were inoculated from this matter, in whom the different stages of the disease preserved their ordinary periods. Case 2d. John Herbert, aged 40, residing at No. 15 Moore-street, was vaccinated with three of his children, May 6th; calling on the 8th day to examine them, the vesicle on the father's arm had the dark mahogany coloured scale, that is usually formed on the 14th day, whilst those of the children presented the usual appearance on the 8th day; they were all inoculated at the same time, and with matter from the same arm; the father stated, that on the second day, his arm was similar to that of the children on the day we visited them. These were the only cases in which the vesicles anticipated their regular periods to so great a degree, but numerous instances occurred where they formed on the 6th and 7th days. Instances where the

appearance of the vesicle was postponed beyond the usual time have frequently presented themselves ; in these, the first evidence of its effect has been visible not until the 8th, 9th, 10th, and even 14th day, from which time it has gone through its regular stages : under these circumstances, a second inoculation has been performed, where the first was thought to have failed ; and as the constitutional symptoms developed themselves, the place first inoculated has taken on the disease, and a regular vesicle formed, going through the periods simultaneously with the other.

Irregular Vesicles, or where the vaccination cannot be depended on. In these cases suppuration takes place on the 3d or 4th day, the scale formed is of a soft texture, resembling that of some forms of Porrigo, and totally distinct from the dark mahogany coloured scale of genuine Cow Pox. It wants, also, the central depression and elevated edges of the true vesicle ; the inflammation of the areola is more defaced, and of a darker colour.

It has been supposed that the virus, after being kept a certain length of time, loses its power of communicating the infection, and undergoes a species of putrefaction, by which it generates a spurious disease. That this is not the case of the scale, we had an opportunity of proving. In consequence of the failure of matter in the summer season, we were compelled to use a scale which had been taken 6 years before ; 9 persons were inoculated, and one took the disease ; the vesicle was regular, and furnished matter for inoculating many others.

It is generally recommended not to take lymph from a vesicle after the areola has formed around it ; we have not found that this circumstance has produced any effect on the vaccination, provided care be taken, that the lymph is perfectly transparent : this is the only essential circumstance.

In introducing the lymph, we make use of scarifications, and draw as little blood as possible. This method we have found preferable to puncture ; and it may be a question, whe-

ther the less frequent occurrence of inflamed vesicles now than formerly, may not be ascribed in some measure to the substitution of *scarification* for *puncture*.

ART. VIII. TWO CASES *of* NEURALGIA, *treated by the Carbonate of Iron: communicated to the Editors of the Journal, by* Dr. J. EIGHTS, *of Albany*.

To the Editors.

GENTLEMEN,

WHEN a remedy is introduced for a disease which has often baffled the skill of eminent men in the profession, I conceive it to be the duty of every physician, who has an opportunity of testing its effects, to make known the result.

Under these impressions, and without any remarks on the nature of the disease, or the modus operandi of the remedy, I enclose you two cases of Neuralgia which have occurred in my practice, and in which the efficacy of the carbonate of iron in relieving that complaint is evident. Should you think them of any practical utility, they are at your disposal.

In the month of March, 1821, Mr. Van A—n, of the town of Guelderland, brought his son to me for advice. He was 18 years of age, tall, but of a feeble appearance. The account which his father gave was, that about a year previous to this time, he was troubled with severe pain in the right side of his face, extending to the upper lip, and to the eye of the affected side, which always produced a plentiful flow of tears. The duration of the pain, at first, was short, and it occurred at long intervals, a week often intervening between them. As the complaint advanced, the paroxysms were more violent, of longer continuance, and the intervals much shorter; and at the time I saw him, he had two or three attacks daily. Several of his teeth had been extracted without any relief; his gums had been largely scarified, blisters had been applied, emetics and cathartics had been repeated-

ly administered, and opium taken internally and applied externally, but all with little effect. The only relief he obtained, and that but partial, was from the spirits of turpentine rubbed along the gum and side of the face. After using the remedies generally advised for this distressing complaint, I determined to try the carbonate of iron, of which I had just then read an account, as used and recommended by Dr. Hutchinson of London. After evacuating the stomach and bowels, half a drachm was given three times a day: on the day that he commenced the use of the iron, he had one severe paroxysm. He remained in town about ten days, during which time he was perfectly free of pain. Being anxious to return to his parents for a few days, contrary to my wishes, he walked eleven miles to his father's house, and perspired very freely. The next day after his arrival he had a slight attack, and the succeeding day one more severe: he then returned to the city. The medicine was now increased to two scruples every four hours, and for three weeks that he remained under my care, he was perfectly free of the complaint. His father now took him home, supposing him completely cured; I recommended a continuance of the medicine for some time, and to discontinue the use of it gradually. His father was so fully satisfied of the good effect of the rust of iron, as he called it, that he purchased a pound of it at an apothecary's, with a resolution to administer it freely: I have since heard he has had one or two slight attacks, but a few doses of the carbonate has entirely removed them.

Mrs. H—y, a respectable lady of this city, aged 70 years, had been for a number of years troubled with severe pain in her face, which would often intermit for several months; in the fall of 1821 she had a severe attack of remittent fever, and from that time she has been constantly affected, being scarcely an hour of the day free from pain. Having in former attacks received little aid from medicine administered by different physicians, she had little hopes from that source.

In December following I was called to see her, for the purpose of giving her some temporary relief from her sufferings. After administering an emetic of ipecacuanha and a carthartic, she commenced the use of carbonate of iron; two scruples were given three times a day: after continuing the medicine about one week, the pain gradually diminished in violence; at the expiration of twelve days, owing to a soreness of her mouth, the medicine was discontinued. The pain was however removed. She now took an infusion of colombo and bark, and at this time has remained free from the complaint.

Art. IX. Singular Case of Extra Uterine Conception.

By Dr. Pleasant Cotton, *of Waynesborough, Georgia.*

The subject of the above case was a negro woman, aged 30 years. On the night of the 23d of January, 1819, I was called to see her in labour. I found her with slight pains, returning at considerable intervals. I proceeded to an examination, per vaginam, but could ascertain nothing satisfactory in consequence of the distention of the labia pudendi from watery effusion. From the best evidence I could collect, I had no doubt but this was her full term of pregnancy; an enema was thrown up and an anodyne given. The pains did not return. In a day or so, I commenced treating her with large and repeated doses of cream of tartar and jalap, for the relief of dropsy. This treatment was continued with practical advantage until the night of the 4th of February, when I was again called to her in labour. The pains were on the decline, and very shortly after, entirely ceased, and did not again return until death, which ensued five weeks after. This patient had been dropsical during the greater part of her pregnancy, and at my last call, I found her universally anasarcous.

The stomach and bowels had measurably lost their sensibility to the stimulus of the aforenamed cathartic, and for it was substituted calomel and gamboge. This, or some other cathartic, had to be given every other day at least, in order to produce evacuations from the bowels ; and without daily discharges, she would be in the most agonizing pain. Her dejections were uniformly of the most morbid appearance, and offensive to the last extreme. For some days previous to death, there was a total suspension of action in the bowels, not being able to procure alvine evacuations by any means whatever.

On examination, *post mortem*, assisted by my friend and colleague, Dr. S. Harlow, we discovered the following facts. In the first place, we drew off from the abdomen three and a half gallons of a very turbid and remarkably offensive fluid. On opening the abdomen, the first thing that presented itself, was the child extending itself across the abdomen, its head in the right, its feet in the left, hypochondriac regions, its back immediately to the umbilicus of the mother. It was as large a child as either of us had ever seen at birth, and perfectly formed. *The funis was of the usual size, about six inches in length, and inserted into the fundus uteri without the intervention of a placenta.* The uterus was about the size of an orange, its coats very much thickened, and indurated, with a small quantity of a thin glassy fluid within its cavity. The abdominal viscera were all diseased, save the bladder. The liver retained its original shape and position, but looked more like a mass of glue than organized animal matter. The spleen had gone into a state of complete decomposition. As to the omentum, there was not the slightest vestige left. The bladder appeared to be the only viscus that had escaped uninjured from this digression in nature. The bowels had firmly adhered in one uniform mass from the stomach to the rectum, and to the posterior and lateral parietes of the abdomen.

REVIEW.

ART. I. AN ELEMENTARY TREATISE *on* MINERALOGY *and* GEOLOGY, *designed for the use of pupils, for persons attending Lectures on these subjects, and as a Companion for Travellers in the United States of America. Illustrated by six plates.* By PARKER CLEAVELAND, Professor of Mathematics and Natural Philosophy, and Lecturer on Chemistry and Mineralogy, in Bowdoin College, &c. &c. &c. 2d Edition, in 2 volumes, 8vo. Boston, 1822.

THE first edition of this work was published in the winter of 1816. Its appearance was hailed with pleasure by the scientific public in this country, from the extensive information it communicated concerning American minerals; and even in Europe, one of the high tribunals of criticism* bestowed on it almost unmixed commendation. When we state that the present edition retains all the excellencies of the former, that it comprises great additions on the mineralogy of this country, and that every discovery in Europe, down to the latest date, is also duly registered, we have, in a few words, sketched its character and its value.

It would be superfluous, after the notices that this work has received, to give a formal analysis of its contents. We shall endeavour to illustrate its value in a somewhat different manner. Before, however, proceeding to this, we must be permitted to offer our tribute of approbation to the author, for retaining the arrangement of minerals, which he adopted in the first edition. Daily experience must convince every mineralogist, that a classification founded on chemical analysis, is the only one that is destined to be permanent. The great promulgator of the Wernerian arrangement in Great Britain, has already abandoned it, and in his later works, substituted that of Mohs. This, he has digni-

* Edinburgh Review.

fied by the name of the *Natural History Method*, but with what propriety the following observations of Professor Cleaveland will sufficiently illustrate.

"In the arrangement of Mohs and Jameson, the principles, depending on the external characters of minerals, are permitted to have their full operation. It hence results, that different ores of the *same metal* are sometimes widely separated from each other; indeed, several species among the ores of the *metals*, are *actually transferred* to the *earthy* class. Thus, the sulphate, molybdate, chromate, phosphate, and carbonate of lead, the carbonate of iron, and the calcareous oxide of tungsten, &c. are arranged with the carbonate and sulphate of barytes, the carbonate and sulphate of strontian in the order Baryte, the sixth order of *earthy* minerals. The green oxide of uranium, the arseniate of cobalt, the phosphate of iron, the graphite, &c. are arranged with mica, pinite, chlorite, talc, &c. in the order Mica, the third order of *earthy* minerals. In fine, *one variety* of arseniate of copper is placed in the third order of *earthy* minerals, while the *other varieties* of arseniate of copper are found in the fourth order of *earthy* minerals, called Malachite, which also contains the phosphate and carbonate of copper." Page 83.

It is hardly probable, that any thing but the distinguished services of Professor Jameson, in the science of mineralogy, can give more than a bare currency to a system, which thus contravenes some of the first principles of classification.

The error in the systems both of Werner and Mohs, seems to be the undue preference they give to the external characters of minerals, in deciding the species. They should be studied and understood, but not solely relied on. The views of Professor Cleaveland on this subject, deserve the praise of eclectic skill, and are worthy of recapitulation.

1. In establishing a scientific arrangement of minerals, their true composition is the only true criterion for determining the species, and *when known, should be employed in all cases.* 2. When the composition of minerals is entirely un-

known, or but imperfectly understood, other characters depending more or less on the composition, must be employed, and of these the more important are derived from the *crystalline form and structure.* The primitive form of crystals, should be attentively examined. 3. When all assistance from analysis, or the crystalline form, is denied, the species must be determined by a well chosen aggregate of those *external characters*, such as structure, fracture, hardness, &c. which depend most intimately on the nature of the mineral. *It is, however, to be understood, that in all cases, where the composition is unknown, the species are to be considered provisional, till the progress of chemistry shall enable us to re-examine them.* Pages 88, 89.*

The ardour and success with which the science of Mineralogy has been cultivated, during the period embraced between the publication of the different editions of Professor Cleaveland, is truly remarkable. Nothing will give a better idea on this point, than merely subjoining a list of the minerals added in this second edition. It is to be remembered, that with very few exceptions, they have all been discovered within the space of five years.

To the first class, there is added,

Barystrontianite,
Blue Vesuvian Limestone,
Sub Sulphate of Alumine,
Sub Sulphate of Alumine and Potash,
Polyhalite,
Crystallized Carbonate of Magnesia,
Pulverulent do. do.

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* The interesting and popular work on Mineralogy, by Mr. William Phillips, which has been re-printed in this country, with NOTES, is arranged on a similar plan with that of the system under consideration, and may be perused with advantage. In Aikin's Manual, [also re-published,] the chemical arrangement is generally pursued, while in the synoptical tables, the minerals are grouped according to certain chemical or external characters.

To the second Class,

Michaelite,
Leelite,
Bucholzite,
Gehlenite,
Siliceous Feldspar,
Ice Spar,
Necronite
Peliom,
Steinheilite,
Indianite,
Romanzovit,
Freisleben,
Haydenite,
Helvin,
Humite,
Grenatite,
The varieties of Zeolite,
Karpholite,
Pargasite,
Pyrallolite,
Native Lime,
Allophane,
Lenzinite
Amblygonite,
Cereolite
Chlorophæite,
Desmine,
Fahlunite,
Sphærulite,
Thulite,
Eudialyte,
Gibbsite,
Maclureite.

To the third Class,

Fossil Copal,
Dysodile,
Hatchetine.

And to the fourth Class,

Cupreous Seleniuret of Silver,
Eukairite,
Tennantite,
Seleniuret of Copper,
Brown Copper,
Stilpnosiderite,
Blue Iron Stone,
Hedenbergite,
Skorodite,
Pyrosmalite,
Cobaltic Sulphuret of Lead,
Plombgomme,
Tungstate of Lead,
Franklinite,
Siliceous Oxide of Manganese,
Oxide of Chrome,
Oxide of Molybdena,
Yellow Oxide of Tungsten,
Crichtonite,
Orthite,
Pyrorthite,
Fluate of Cerium,
Yttrocerite

Two new metals have also been discovered, viz. Selenium and Cadmium.

The most interesting view, however, in which this work can be presented to our readers, is in its illustration of the progress of the science in this country. When the first edition was published, it was remarked by the Edinburgh Reviewers, (vol. 30, p. 387, American edition,) that with the exception of the *Red Oxide of Zinc and the Native Magnesia*, (Hydrate of Magnesia,) both of them discovered by Dr. Bruce, "no simple minerals had hitherto been noticed in the United States, that were not already known to exist in other parts of the world." Five years have scarcely elapsed, and the list is more than doubled. We can now add,

The *Marmolite* of Nuttall.

The *Yellow Oxide of Tungsten*, discovered by Professor Silliman.

The *Franklinite*.

The *Necronite*, discovered by Mr. Hayden.

The *Jeffersonite*, discovered by Professors Vanuxem and Keating.

The *Green Oxide of Zinc*, from Ancram, ascertained by Dr. Torrey.

The *Maclurite* of Seybert and Nuttall.*

The *Gibbsite*,† ascertained by Dr. Torrey and Professor Dewey, (provided the Wavellite be deemed a Phosphate of Alumine;) and we may also subjoin,

Siliceous Felspar, unless the Albite is considered the same mineral. This was discovered by Dr. Hunt, and declared a new variety by Col. Gibbs.

Nemalite, described by Mr. Nuttall.

The *Crystalized* Carbonate of Magnesia, discovered by Mr. Pierce.

The *Haydenite*? (Cleaveland, p. 478.)

We have also been struck with the great variety, as well as number, of minerals found in the United States, when

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* New-York Med. and Phys. Journal, vol. 1, p. 202.

† Ibid, vol. 1, p. 68.

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The accuracy and neatness with which this work is executed, are deserving of great commendation. We have noticed but few errors, in addition to those mentioned by the author. In p. 145, however, the name *De Runey*, should be, we believe, *De Russey*. Some remarks have also occurred to us, in turning over the pages, which will best be presented, by referring to the species to which they apply.

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Boylston committee, on two questions proposed by them, and which have been long agitated by experimental philosophers.

We shall, without further introduction, say something on each of these subjects, and reserve for ourselves the pleasure, at a future day, to lay before our readers some account of the author's work on the late spotted fever.

We shall say nothing at present concerning the opinions of Hippocrates, Galen, and several others, of the communications which they supposed to exist between the liver and the stomach, and the urinary organs.

The copious discharge of urine from the bladder, almost immediately after taking large quantities of drink into the stomach, is a fact familiarly known to every person, but one that has never been satisfactorily accounted for.

The natural explanation which has always suggested itself, is, that there must necessarily be some other and more direct communication between the stomach and bladder, than that of the round of the circulating fluids. There is reason to believe that even Hippocrates suspected this. Galen also was particularly struck with this phenomenon, and thus ingeniously endeavours to explain it.

"Quippe in libris de naturalibus functionibus jam ostensum est, jecur ex ventriculo per mesentericas venas, velut arbores a terra per radices, cibum ad sese allicere ; sic etiam renes id, quod aquosum, in sanguine est."

We are not sure that the author of the essay before us is correct in interpreting this passage to mean blood vessels passing between the kidneys and stomach. It is more probable from the language, that Galen meant another class of vessels, which, by a direct communication, conveyed off the watery part from the blood, in contradistinction to the mesenteric veins, which carried the more solid and nutricious matters of the intestinal tube into the liver, and thence into the circulation. Possibly he may have seen lymphatic vessels

passing between these organs. We cannot conceive that he alluded to the emulgent veins and arteries.

The hypotheses of Fabricius, Darwin, and others, since the time of Galen, are not worthy of being remembered. With regard to their experiments, which are equally unsatisfactory, the error was, that they seemed to be persuaded of the existence of an immediate communication from the stomach to the bladder, instead of directing their researches, as Bartholinus more rationally did, to some connection of this kind, between the stomach and kidneys, or as Sir Everard Home has since done, to the anatomical relations which subsist between the stomach and the blood vessels. By grasping at too much, they missed the true secret: the honour of discovering, or at least of opening the way for such discovery, has been left for Sir E. Home. He has rendered it almost certain, by his neat and judicious experiments, that a large portion of the fluids taken into the stomach, are absorbed directly into the blood.

Our author has treated his subject very methodically, commencing with the history, and finishing with the experiments and results. Dr. Hale remarks,

"Until Sir Everard Home's experiments in 1808, it was doubtful whether the speedy appearance of the urine in these cases was not the effect of a sympathetic excitement of the urinary organs, by the presence of a large quantity of liquid in the contiguous viscera, rather than of the passage of the same portions of fluid into those organs. Indeed, it is not even now decided that this is not sometimes the case. But Mr. Home has shown that the same portion of fluid which is received into the stomach, will, under some circumstances, pass into the bladder, in a very short space of time." p. 26.

Absurd as this idea may appear to be, it is still maintained by many reputable physicians in this enlightened age. It is even contended that the *odours* of certain substances, taken into the stomach, and detected in the secretions of the mammæ, skin and kidneys, may be explained on the same

principle. (See Chapman's Journal; review of Dyckman's Pathology of the Fluids.)

We cannot justify the author in declining to examine this subject anatomically; for after all that can be said in favour of physiology, minute and close dissection, is the basis upon which our reasonings and experiments on this subject must ultimately rest. We could wish that this branch of medical science were more seriously attended to in our different universites, and that more ample provisions were made for zootomical inspections. The great school of Paris would serve as a fine model for us, and might indeed be copied by the colleges of many European capitals, which nevertheless are not sensible, apparently, how much behind-hand they are in this respect to the French metropolis.

"In pursuing the investigation of this subject, it is not my intention to seek the passage in question, by any *anatomical* discoveries. After the laborious researches of Diembroeck, Ruysch, Malpighi, Lewenhoeck, and other eminent anatomists, it would be presumptuous for me to expect to find what they could not find; or to regard my inability to discover it, as any additional proof of its non-existence. It is in this view, that I am disposed to say with Ruysch, in the words of my motto, 'Oculi mei non adeo Lyncei, ut hunc nodum solvere queam.' My researches, therefore, have been purely physiological." p. 38.

We now come to the experiments of the author. He seems to have been well aware of the nature of the task before him.

"The first object," says he, "must be to ascertain, so far as it is practicable to do it, what length of time it would require, for fluids to be carried from the stomach to the bladder, through the medium of the circulation. This can never be determined with any considerable degree of precision; yet some approach to the knowledge desired may be made by estimating the rapidity and force of the blood in circulation.

"The whole quantity of blood actually in circulation in an adult,

cannot be estimated at more than from thirty to forty pounds, and is probably less. The quantity which the heart is capable of throwing out at each contraction of the ventricles, is said, by Haller, to be about two ounces ; and there are in a middle aged person, at least, seventy pulsations in a minute. Making this the basis of our calculation, supposing there are forty pounds of blood, it will take four minutes and thirty-four seconds, to complete one entire revolution of any given portion of the blood, including its course through the lungs. If the quantity of blood be only thirty pounds, the same revolution will be accomplished in three minutes and twenty-five seconds. But it is not certain that the heart actually throws out at each contraction, the whole quantity of which it is capable. Suppose it to throw out only three fourths of the full quantity, making an ounce and a half at a pulsation ; in this case, six minutes and fifty-two seconds will be required to complete the circulation of forty pounds of blood ; or five minutes and one second for thirty pounds.

"It is to be remembered, however, that the course from the place where the fluids of the stomach enter the blood, to the kidneys, is very far short of a complete circulation through the whole body. I shall here take it for granted, that the absorption of fluids directly from the stomach, is sufficiently established by Mr. Home. The distance from the stomach to the kidneys, through the circulation, then, is that from the stomach to the heart, through the lungs, back to the left side of the heart, and from the mouth of the aorta to the terminations of the emulgent arteries. This, at the most, cannot be supposed to exceed one half of an entire revolution in the circulation ; and is probably less than one fourth. The time requisite, therefore, as far as the circulation is concerned, for fluids to pass from the stomach to the kidneys, is not more than from two to three and a half minutes ; leaving the remainder of the time, which actually intervenes between their being taken in drink, and ejected in urine, to their absorption in the stomach, and their secretion and excretion in the kidneys and bladder.

"I do not pretend that this calculation gives with precision the length of time required for the purposes mentioned in it. But I am persuaded that the errors are upon the side of allowing too much, rather than too little time. Neither do I rely upon it

as evidence that the fluids actually do pass through the blood, to go from the stomach to the bladder. I bring it forward here merely to show, that from the great rapidity of the circulation, the supposition of their passing in this way is not so absurd, as it seems generally to have been considered.

" We have no data, by which to determine with accuracy how long the kidneys are occupied, under different circumstances, in accomplishing their secretion. Yet these are some facts, which go to show that they sometimes perform it very quickly ; and there is no reason to suppose that the urine is detained in the pelves or ureters, or necessarily in the bladder, after it is secreted. If a person is suddenly exposed to violent cold, or to fright, or anxiety, very soon after having voided his urine, it often happens, that he will almost immediately pass a very considerable quantity more, which will be watery and colourless, without his having taken any fluid in the mean time. As this last urine is entirely different in its appearance, from that which preceded it, it must have been secreted after that was ejected. Indeed the structure of the kidneys, and the size of their vessels, seem adapted to the secretion of a large quantity of fluid in a short space of time ; especially when they are stimulated to more than usual activity, by the substances brought to them in the blood, such as are the fluids which admit of the most ready detection in the urine. The emulgent arteries, as Boerhaave observes, are much larger in proportion to the size of the organs they supply, than those of any of the other viscera.

" We have next to inquire, what length of time is consumed in the absorption of the fluid from the stomach into the blood. But here we have nothing to guide us in the inquiry. I will only remark, therefore, that the theory of a direct passage to the bladder is equally subject to the same objection. For, as it is not pretended that there is any considerable vessel, by which fluids are conveyed from one viscus to the other, they must necessarily be absorbed ; and no reason can be given why they should not be absorbed as speedily through the vessels which convey them directly into the blood, as in any other way.

" So far, then, as any reliance can be placed upon this calculation, it appears that the course from the stomach to the bladder,

through the circulation, is hardly less direct and open, than any which can possibly be supposed to exist. That it is sufficiently direct to admit of an explanation of the phenomena, is all that is necessary for me to show.

"I will now proceed to the experiments which I have performed, for the purpose of ascertaining whether, in fact, there is any other course by which the fluids of the stomach may pass off by urine." p. 39—43.

We regret that the flattering expectations which we had been induced to form from these well written prolegomena, have not been realized. None of the experiments were conducted with that precision which was due to their importance, and of which the subject was so eminently capable. We are very much inclined to believe that the admixture of cider, cinnamon, spirits, and opium, with the tinctures upon which the chemical tests were afterwards to be applied, may have materially affected the results of the experiments. This much we know, from our own personal experience, that coffee, which, it appears, the author regularly took with his roll every morning for breakfast, and only three or four hours before he began his experiments, sometimes manifests itself in the urine by a *strong odour* and yellow colour within twenty or thirty minutes from the time it is drank, especially if taken in more than ordinary quantities. Whether any of the changes effected in the colour of the author's urine, by the test of potash, are to be attributed to the affinity between the alkali and the coffee, or between the alkali and the tincture of rhubarb he drank, or to both, is a question which must remain in doubt. It would assuredly have been better to have omitted taking the coffee at breakfast, to say nothing of the oil of cinnamon, rum and cider, which he drank, with the rhubarb, to take off its unpalatable flavour. We are a little surprised, also, that he did not provide himself with an assistant, to bleed him at the proper intervals, as this part of the process had an important bearing upon the subject under discussion. To show that we have not misrepre-

sented Dr. Hale, we will refer the reader, as a sample, to Experiment III.

Upon the whole, Dr. Hale deserves praise for what he has done, though his experiments, in fact, are a close imitation of those of Sir E. Home. The following are the conclusions to which the author arrives, and which may be taken rather as a statement of the grounds of the argument up to the present time, than as the result of his own discoveries.

"The following conclusions appear to result from the facts observed in the foregoing experiments.

"1. The speedy discharge of watery urine after taking a large quantity of liquid in drink, is not occasioned by sympathetic excitement of the urinary organs, but by the actual excretion of the fluid received.

"2. The same portions of fluid, which are received into the stomach, begin, under certain circumstances at least, to be collected in the bladder within twenty minutes from the time when they are taken.

"3. When a large quantity of fluid is taken, the excretion of urine is greatly increased; but the increase does not bear any very exact proportion to the quantity of drink. The increased discharge begins in about twenty minutes, is at its height in about an hour, and terminates generally in less than two hours.

"4. When a liquid which is coloured with rhubarb is taken, the colour of the rhubarb appears in the urine; and its appearance in that excretion is not at all confined to the time of the increased discharge, which is occasioned by the quantity of fluids received.

"5. When a liquid, which is of such a nature as to admit of ready detection in the animal fluids, is taken into the stomach, if the quantity is sufficiently large to affect the whole mass of blood, it will be found in the blood drawn from the veins as soon as in the urine; although it will continue to appear in the urine after it has disappeared from the blood.

"6. When a quantity of colouring matter sufficient to affect the whole mass of blood is taken, mixed with a large quantity of

liquid, the colour appears in the urine as soon, at least, as the excretion *begins* to be increased, and is at the deepest before the increase of urine is at its height; but if the quantity of colouring matter be only a little more than sufficient to tinge the amount of liquids taken, it does not appear in the urine until after a quantity of watery urine has been passed, and does not give its deepest colour until after the excretion has diminished." pp. 56, &c.

The point which the author appears to have been most desirous of ascertaining, and which undoubtedly was of great moment, was, whether the fluids taken into the stomach, would be proved to have entered simultaneously, or nearly so, into the blood and the bladder.

"It is much to be regretted that neither of these gentlemen, [Home and Darwin,] has told us, with more precision, what length of time intervened between drinking the liquor which was sought in the blood, and drawing the blood for examination. It is at least probable that this circumstance alone would explain most of the difference of their results. Two drachms of nitre are not sufficient to impregnate the whole mass of blood, supposing it to have been mixed with that fluid; and therefore the whole quantity might have passed through the veins, and yet have escaped detection, until it was separated from the blood by the kidneys, and appeared in the urine. It will be seen by the experiments which follow, that this explanation does not rest merely upon hypothesis, or conjecture." pp. 36, 37.

That he has failed in this attempt, and that his experiments, therefore, did not arrive at results more definite than those of Sir E. Home, is evident from what follows. It was not until Experiment III. that he first undertook to determine the changes effected in the composition of the blood.

"In twenty minutes, three fourths of an ounce was discharged. It was of a light yellowish colour, and was changed by the test to a dull reddish yellow. As soon as possible, I opened the

median vein of the left arm, and took two and a quarter ounces of blood. This was completed in less than five minutes." p. 47.

Again—

"In thirty-five minutes, I attempted to take more blood from the orifice in the vein, but without success.

"In forty minutes, voided two ounces of urine. Its colour was a bright yellow, rather lighter than the last, very clear, and was changed by the test to a clear wine-red. Immediately after, I opened the basilic vein, and took an ounce of blood. This was accomplished in less than two minutes." p. 48.

In Experiment V. and last, before he drank the rhubarb—

"I opened the median vein of my left arm, and took an ounce of blood, to serve as a standard of comparison. At twelve o'clock I drank undiluted an ounce of tincture of rhubarb, in which were thirty drops of tincture of opium; and to cover the taste, I took, at the same time, three or four drops of oil of cinnamon, in a very little common spirit." p. 55.

Again, after the draught, he says,

"In twenty minutes, voided a drachm and a half. It was obviously coloured by the rhubarb, and was changed very considerably by the alkali. Immediately after I made another opening in the median vein, and took three ounces of blood. This was accomplished in less than two minutes." p. 55.

Again—

"At six o'clock, [i. e. 6 hours after he took the rhubarb,] voided an ounce and three quarters. It was evidently tinged by the rhubarb, but less so than that which had been previously discharged. I immediately opened the median basilic vein, and took two ounces of blood." p. 55.

It was therefore only in two of the five experiments that Dr. Hale pretended to examine the blood; but what is very remarkable, neglected to apply his tests to it until the succeeding days, when it had necessarily undergone more or less decomposition, and was consequently unfit for experiment. In Experiment III. he says,

"The next day I carefully examined the blood which had been drawn. The serum of the two first portions was evidently tinged by the rhubarb; that of the second, more so than the first. It left the peculiar stain of rhubarb upon the glass. The colour of both was a little deepened by the test. The quantity of the third portion was too small to permit me to decide with confidence; but it appeared to be more deeply coloured than either of the others." p. 49, 50.

And in Experiment V.

"The next day, I compared the serum of the blood, which was drawn at the different times. That which was taken at twenty minutes, was very considerably coloured by the rhubarb, and received a deeper tinge by adding the alkali. The colour of this portion very nearly resembled that produced by two drops of the tincture of rhubarb in a drachm of pure serum, and was nearly as much changed by the test. The serum of the blood taken at six o'clock was not at all tinged, but appeared, in every respect, like that drawn before the rhubarb was taken." p. 56.

Whatever changes, therefore, may have been produced in the blood by the tests at this late period, cannot be relied upon with implicit confidence. Dr. Hale should have left no room for doubt or cavil, when so excellent an opportunity was afforded him of determining with exactitude, that which he was in search of. We are aware that he had taken the precaution in the fifth experiment, to compare the blood drawn from the arm before the draught, with that which he drew from the arm after it, and that the application of the tests to these different portions, was followed by different results. But allowing that no decomposition had taken place in the space of twenty-four hours, or that there could have been no fallacy in the results produced by the

tests, assuredly it must be confessed that one single experiment is not sufficient to demonstrate the truth of the theory.

The following paragraph explains the object of the second dissertation.

"It sometimes happens in the course of medical practice, that a particular medicine is strongly indicated, at the same time that there is some powerful obstacle in the way of administering it. These cases are indeed rare; but when they occur, they are of a most serious nature, and call very urgently for some mode of relief. A mechanical obstruction in the œsophagus might perhaps be removed by vomiting, were it not that this same obstruction renders it impossible for an emetic to be taken: and still more frequently, the operation of a carthartic is prevented, when it is very much needed, in consequence of an irritable state of the stomach, which rejects every medicine that it receives. Hence we are led to the inquiry, whether some other mode of introducing medicines into the system be not practicable, and particularly whether this may not be done by injecting them into the veins." p. 71.

After some unsuccessful experiments upon dogs by Dr., afterwards Sir Christopher Wren, and by Signior Fracasti, attempts, we are informed, were made at Dantzic about the year 1667, by Mess. Fabricius, Smith, and Scheffler, to ascertain the effect of medicines when injected into the veins of the human subject. The medicines were, laxatives and alteratives; and the diseases, which are said to have been syphilis, epilepsies, gout, apoplexy, and plica polonica, are reported also to have been miraculously cured, with the exception of two out of the eight, who died under the operation of the experiments.

Besides the deleterious effect of air introduced into the blood vessels,

"Another circumstance which seems to show that the excitability of the different parts of the circulating system is peculiar to themselves, and that there is danger in disturbing the regularity of their actions, is the effect produced by the introduction of ve-

nous blood into the arterial system. If the consequences are so fatal, which follows the application of a fluid so similar to the natural one, as to elude all attempts to detect any difference, except in colour, how much more injurious must be supposed to be the action of foreign substances, which have been scarcely at all assimilated to the animal system.

"Another danger to be apprehended from the injections into the veins, arising from their peculiar irritability, is an inflammation of the internal coat of the vein. We are taught in surgical treatises, that very severe, and even fatal inflammation, has sometimes been excited in a vein, by puncturing it with a dull or rusty lancet, in bleeding. Such occurences are doubtless very uncommon. But if they can ever be produced by so slight a cause, there would be much more reason to fear them, from the irritation which would be unavoidable in introducing foreign substances into the vein. This danger would be greatly increased, if the substance introduced were of an irritating nature, as most medical substances must be; especially when applied to so delicate a structure as that of the internal coats of the veins." p. 78—79.

Nothing was done in this department in physiology, until the experiments of Fontana, Brodie, Magendie and Orfila, which besides being contradictory, only go to show, (and which in truth proves very little on this subject,) that these injections have occasionally been practised with safety upon pigeons, rabbits, guinea pigs, and some other species of the smaller animals. (p. 80, &c.) Contrary to the opinion which has been commonly entertained, that medicinal substances differ in their effects according as they are admitted into the blood, or into the first passages, the general tendency of these experiments is,

"To lead to the belief that the effects of medicinal substances are not materially different, in consequence of the modes of their introduction into the system." p. 84.

Again, says our author,

"It is sufficiently evident, however, in regard to many sub-

stances, that the mode in which they are introduced into the system does not materially change the nature of their action upon it, except in respect to its violence." p. 95.

If this, then, be true, and if it be also certain that the same substances which are poisons to some animals, are innocuous to others, (p. 98,) and that the experiments which have been made by different physiologists, are, for the most part, contradictory, or enveloped in doubt, (p. 94,) by what motive was our author induced to proceed in this unprofitable investigation, or by what process of reasoning did he arrive at the following conclusion?

"From a very general view of the subject, founded upon the observations of Orfila and others, I was strongly inclined to the opinion, that the medicinal substances in question may, in some cases, be advantageously introduced into the system, by other means than by the stomach." p. 96.

Useless, it would seem, as these researches are represented to be by the author, he nevertheless persisted in undertaking them, which does not perhaps make it to be regretted that he was foiled in almost every experiment; though he appears to have bestowed much more labour on this subject, and to have pursued it much farther, than that which had previously engaged his inquiries. Whether the substances he used were too inert, or the instruments he employed too obtuse; or whether his apparatus for confining the rabbits was too complicated, or that he did not follow closely enough the track of his predecessors, it is impossible to say; all that we know is, that there seemed to be constantly in the way some failure or mistake to defeat his purposes. At one time the veins were too small, or too much lacerated; at another the scalpel slipped from his hand and he cut the artery; at another, the liquid in the syringe was nearly all spilt. Occasionally there did not appear to be on hand a plentiful supply of rabbits; and now and then, the author was unfortunately taken ill, and could not attend to the progress of the experiments. The following quotations explain our meaning.

"In consequence of some minor difficulties in this part of the operation, a part of the oil was lost, and not more than two thirds of it was introduced into the vein."

"But at about two in the afternoon, it was found dead, and a large quantity of fresh blood upon the floor beside it. I was ill at the time, and was not able to examine this animal until several days after its death; in the mean time it had received some injury, which rendered it impracticable to ascertain with precision the state of the wound, and of the parts concerned."

"I attempted to make an injection into the crural vein of a rabbit, and made an incision for that purpose a little above the knee; but I found the vein too small to admit the tube. While I was trying to introduce it, the animal made a sudden start, and I wounded the artery."

"The following experiment was made upon the same pair of rabbits as the first, but the operations were reversed, the medicine being injected into the vein of the male, and the female receiving it into the stomach."

"The tube was introduced, and the infusion of rhubarb slowly injected into the vein. This was done with some difficulty, in consequence of the smallness of the tube; and a part of the infusion was lost."

"I laid bare the crural vein of a rabbit near the knee joint, and passed a ligature under it. I then made an opening into it, and attempted to introduce the tube, for the purpose of injecting an infusion of ipecacuanha; but the vein was too small to admit the tube. After several trials, I was obliged to abandon the attempt. In these trials, partly in consequence of the struggles of the animal, the vein was considerably injured, and was split so, that the tube passed through it."

"I prepared an infusion of colocynth, by pouring two ounces of boiling water upon one drachm of powdered colocynth, which was filtered after twenty-four hours. Two drachms by measure of this infusion was given to a rabbit, at twelve o'clock. As no effect was produced by it, at a quarter past three in the afternoon, I gave four drachms more of the same infusion. Still the medicine produced no effect."

"I gave to a rabbit four drachms by measure, of the infusion

of rhubarb before mentioned, [Experiment III,] but it had no apparent effect whatever."

"To another rabbit I gave one scruple of ipecacuanha in powder, mixed with three drachms of water. Half an hour after, I gave as much more in the same quantity of water. I could not perceive that it produced the least effect upon the animal."

"The next morning he was found dead. He was entirely stiff, and appeared to have been dead several hours. I was prevented, by the preparations for the following experiment, from dissecting it at the time; and was afterwards too ill to do it, until it was too late to derive any benefit from the dissection." pp. 101—111.

There was one experiment, however, [the tenth] made by our author, which, though it will never probably be followed by any useful results, is calculated to redeem all these blunders, inasmuch as it reflects the highest honour upon his moral bravery and his bold zeal in the cause of truth; being an experiment that has been projected time out of mind, but always deemed too hazardous to perform. Dr. Hale, an American, we are proud to say, is the first who has had the courage to perform on his own person, the dangerous experiment of injecting foreign substances into the veins of his body. There is a spirit of chivalry and daring in this act, which would have done honour to the most ardent enthusiast of experimental inquiry, and will, doubtless, cause the author to be recorded, by the medical historian of future times, among those few illustrious men, who, like Russel, Desgenettes, Whytte, Larrey, Bichat, and Valli, with undaunted heroism have braved the terrors of pestilence or nobly sacrificed their lives in determining its laws. We believe that this experiment stands without a parallel, and that it is one which, by the curious information it has disclosed, deserves to be ranked in the light of a discovery. It will always make the book of Dr. Hale much sought after, and a point of reference for future physiologists, serving like the amber which encrusted the remains of an insect, to carry down to posterity the adventitious matters with which it is associated.

We must be pardoned by the reader, for inserting the account of this experiment at length.

"Having been persuaded, from my own observations, and those of others, that some of the milder medicines may be injected into the veins with safety, I resolved to make the experiment upon myself. Accordingly I filled a half ounce measure with cold-pressed castor oil, and placed it in a basin of water of the temperature of 100°; one drachm of it, I drew into a syringe, and placed this also in the basin; it being my intention first to inject one drachm, and if I should feel no inconvenience from it, to continue the injection of the remainder of the half ounce. When I had made all the preparations which I thought necessary, I sat down and counted my pulse, and found it to beat eighty times a minute. I was in good health, but could not avoid some little agitation and excitement of feeling at the novelty and uncertainty of an experiment upon myself, which, so far as I knew, had never been attempted upon any human being; and this had a little quickened my pulse. An assistant [a medical student] placed a ligature round my left arm, as in the common operation for bleeding, and opened the median vein by a pretty large orifice; taking particular care that the opening in the vein and the skin should be exactly opposite. He then attempted to introduce the silver tube, while I held a bowl to receive the blood, which flowed very freely. But being a little agitated, he was not able to get the tube into the orifice in the vein. As there was no time to be lost, I took the tube myself, and after several ineffectual trials, which gave considerable pain, I succeeded in introducing it. We immediately took off the ligature, and began to inject the oil. The hæmorrhage ceased as soon as the ligature was loosened: we estimated that about eight ounces of blood was lost, before that was done.

"The injection of the oil was a slow operation. In consequence of the delay arising from the difficulty of introducing the tube, the temperature of the oil was reduced to about 70°. It was consequently less limpid, and less easily forced through the small tube into the vein. But the principal obstruction arose from the difficulty of carrying the oil forward into the circulation, after it had entered the vein. It was constantly disposed to regurgitate, and to pass out by the side of the tube into the cellular membrane,

and upon the arm. To prevent this, we injected the oil very slowly, and as often as a little was collected in the vein, it was necessary to press it forward gently by the fingers upon the arm until it disappeared. While we were injecting the first drachm of oil, I carefully watched my own feelings, and kept my hand upon the region of the heart, that I might be fully sensible of it, if there should be any unusual pulsation ; and after this drachm was all thrown up, we waited two or three minutes to watch its effects before we injected any more. But not perceiving any unnatural sensation, we proceeded to inject the remainder of the half ounce. In doing this about a drachm was lost, by the regurgitation of the oil out of the vein ; and we poured out another drachm and injected it, so as to make up the full quantity that I had originally intended to use.

" It was half past eleven in the morning, when the vein was opened, and we were occupied twenty-five minutes in completing the injection. In order to be certain that the oil actually entered, and to retain as much of it as possible, I carried the tube some distance into the vein ; the greatest part of the time, not less than three quarters of an inch of its length was within the vein. There was no hæmorrhage when the tube was withdrawn. There was a tumour, of nearly the size of half a walnut, below the vein on the inside of the arm, occasioned partly, if not wholly, by an effusion of the oil into the cellular membrane, and increased perhaps by an extravasation of blood with it. A compress of lint was placed upon the wound, and the arm was bandaged as in the common operation of venæsection.

" I felt very well for a short time after the operation was finished. The first unusual sensation that I perceived, was a peculiar feeling, or taste, of oiliness in the mouth, a little after twelve o'clock. Very soon after, while I was washing the blood from my arm and hands, and was talking in very good spirits, I felt a slight nausea with eructations, and some commotion in the bowels, then a singular indescribable feeling seemed very suddenly to ascend to my head. At the same instant, I felt a slight stiffness of the muscles of the face and jaw, which cut short my speaking in the middle of a word, accompanied by a bewildered feeling in my head, and a slight faintness. I sat down, and in a few moments recovered myself a little.

"This part of the experiment had been performed in a room, at a little distance from my lodgings. At a quarter past twelve, I walked home My countenance was pale, and the oily taste continued in my mouth, with some dryness; but I felt a little better for the air. After sitting ten minutes, at twenty-five minutes past twelve, I counted my pulse, and found it seventy-five in a minute.

"*Thirty-five minutes after twelve.* The disturbance in the bowels continues and increases; slight pains moving about in them, with the feeling as if I had taken a cathartic: copious eructations of wind, and slight nausea. There is a strange sensation in my head; it is not a dizziness, though somewhat like it. My arm feels rather stiff, which I attribute to the bandage; it is also a little sore, but is not painful.

"*Forty five minutes after twelve.* The bowels are still more in commotion, and the nausea is increased. My mouth still feels oily, but is not so dry as before. In five minutes more the disturbance in the bowels was increased so much, that I thought there would have been a discharge from them, and made the attempt; but without success. There is a slight pain in my head, and the strange feeling continues.

"*Twenty minutes past one.* The pain in the bowels is increased, with some tenderness on pressure; have a very strong feeling as if a cathartic were about to operate; but an attempt to procure a discharge from the bowels was unsuccessful, as before. The nausea continues.

"*Two o'clock.* My general feelings are better: the nausea is nearly gone. Notwithstanding my previous experience of the deceptive nature of the pain and uneasiness in the bowels, the feeling of inclination to stool was so strong and distinct, that I was induced to make another attempt, but with no more success than before. The same thing occurred again at forty minutes past two, and twice in the course of the evening. The sensation was, in every instance, strong and perfectly distinct; at least it entirely deceived me, although I was on my guard, from the previous unsuccessful attempts. In the course of the afternoon and evening, the flatulence and pain in the bowels diminished: but the tenderness remained for several days.

" At twenty minutes past two, while I was making a little exertion, my arm began to bleed again, rather freely; and we had some little difficulty in stopping it. I was alone at the time, and before I could call my assistant, and take off my coat and apply the dressings, about six ounces of blood were lost. We were obliged to make the compress and bandage quite tight over the vein; and even then, there was a considerable ecchymosis into the cellular membrane.

" At three o'clock I dined upon a piece of pudding, which I ate with some little relish, but felt a slight nausea afterwards. About four o'clock, having a pretty urgent call to visit a patient, I went a little distance in a carriage, but took my assistant with me, to guard against accidents. I did not go out again until the 25th of February, and only twice for a short time till the second of March. Towards evening my arm became quite stiff, and considerably painful, and continued so through the night. It was swollen on the inside, from several inches below the elbow almost to the axilla; and there was considerable heat and tension, especially about the elbow, and a little above it. At eleven o'clock, my pulse was eighty-four. I passed rather a restless night, but got some sleep.

" *February* 21. In the morning there was a small discharge from the bowels, which was smaller and more costive than I am accustomed to have at that hour. My arm was more swelled, and more painful than before; pulse eighty. I had some pain in the head, and was all day much inclined to chilliness, though without true rigors. My arm was quite painful through the day. I had some fever and loss of appetite, and felt altogether too ill to make any use of my faculties, either of body or mind. This state continued several days; and when I began to recover from it, I found my strength so much diminished, that it required two or three weeks to restore it to its former vigour. In order that I might interfere as little as possible with the effects of the injection, I wished to defer making any application to my arm as long as it could prudently be done; but on the evening of the 21st it became so painful, that I applied pieces of linen dipped in the water of acetated litharge, diluted. This answered the purpose, and in some measure relieved the inflammation and pain; and I passed a rather more quiet night.

"*February* 22. I was costive the whole day; and at night took a mild cathartic pill. The pain in my arm was less severe, and I was in every respect better. From this time I gradually recovered my health, although very slowly. I made use of no more medicine, except to continue the lead-water. The swelling of my arm went off slowly, by the diminution of the inflammation, and the absorption of the effused blood; so that on the 25th I was able for the first time to touch my forehead with the end of my fingers. For some time after I recovered my appetite for food, my powers of digestion seemed to be enfeebled, and I was frequently annoyed by indigestion.

"It is now four weeks since the experiment was begun by injecting the oil, and I have not yet quite recovered my usual strength and vigour. I am more easily fatigued, and am obliged to pay more careful attention to my diet than before. My left arm is weaker than it was previous to the operation, and is still sometimes subject to pains about the elbow. The tumour, which was made by the effusion of the oil and blood into the cellular membrane, is not yet wholly absorbed, although it has been constantly diminishing. It is now to the feeling about the size of one half of an English walnut. It does not however materially impede the motions of the arm.

"I have been thus particular in detailing the circumstances attending this disastrous experiment, in order that my readers may judge for themselves, how far the symptoms, which followed the operation upon the vein, were the necessary consequence of the injection, or whether any of them might have arisen from accidental circumstances, or from the manner in which the operation was performed. I am aware of the difficulty of observing correctly one's own feelings, and of the liability to mistake the impressions of the imagination for the effects of disease, or the operation of medicine. But I am not conscious that I have done so in this case."

The remaining four experiments go to show, that irritating substances, like alcohol, calcined magnesia, and Epsom salts, when injected into the jugularsor other veins of small animals, generally produce convulsions and death.

After comparing the experiments of Orfila, Magendie, and others, and weighing the unpleasant consequence which followed the bold attempt of Dr. Hale upon his own person, we feel constrained to say, that he is by no means warranted in coming to the following opinion.

"From a review of the observations which have been presented, I think it may be regarded as established, that *in general*, the operation of emetics and cathartics on the stomach and bowels is the same when they are injected into a vein, as it is when they are received into the stomach, with the exception that their action is much more speedy and energetic." p. 125.

Rather let us conclude with the more rational remark of the author, that

"The operation necessary to making an injection of any medicine into a vein, is of too serious a nature, in comparison with taking the same medicine by mouth, ever to come into general use in ordinary cases, even if there were no other objection to it." p. 127.

In finishing our remarks upon the work of Dr. Hale, we cannot forbear to observe, that the style is eminently perspicuous and correct, and free of that bombast and verbosity with which our writings, especially those of our youth, are so apt to be vitiated. It reflects much honour also on the progress of medicine in New England, that the attention of the younger part of the profession is turned to those practical pursuits and useful researches, which are the only sure road to distinction.* T.

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* We have received the above review from a valued correspondent, and we publish it, without wishing to be considered as approving of all the writer has advanced.—Ed.

Medical and Philosophical Intelligence.

DOMESTIC.

Sick Stomach.—A previous part of the present number of our Journal contains a communication on the subject of this singular disorder, which seems to be very prevalent in certain districts of the West. As the facts stated by Dr. Beck, are merely additional to those embraced in certain papers which have lately appeared in the Philadelphia Journal of the Medical and Physical Sciences, and the Western Quarterly Reporter, we present our readers with a detailed account of the disease, as furnished by Dr. Asa Coleman.

"A disease has been prevalent in some of the western counties of the state of Ohio, since their first settlement, which is singular in its symptoms, and frequently fatal in its effects. The country people name it the Sick Stomach, from the sickness and vomiting attending it. This disease is common to a certain extent on the Miami River, and all its branches, north of Dayton, particularly on Mad River, and the open country between this and the Scioti river. Some other parts of the Western Country are also subject to it.

"This malady appears to be, in a great measure, confined to particular tracts of country, often of no great extent, and in which there is no peculiarity as to humidity, dryness or elevation, different from the adjoining country where it is not met with; nor does it appear to extend its geographical limits, since the part of country in question has become generally settled. The time at which it is most common, is that of the Summer and Autumn, though it is occasionally seen in all the other seasons.

"In narrating the symptoms, we shall divide the disease into three stages or forms, to render the description more perspicuous.

First stage.—The patient complains of a general weakness and lassitude; pains or soreness in the calves of the legs, sometimes ex-

tending up the thighs ; disagreeable sickening sensations are felt at the stomach occasionally ; the appetite becomes somewhat impaired ; sometimes a disagreeable gnawing sensation in the stomach is complained of, especially if food be not taken at the usual time. This sensation appears to be less after eating. He is now easily exhausted by exercise, especially from walking, which increases the pain in the calves of the legs, and produces so much loss of muscular power, that the limbs are not able to support the body, and the patient is compelled to rest. This condition is for the time ameliorated thereby, but will return on a repetition of the exercise, and if this is violent, the disease assumes a more active form. These symptoms will sometimes continue for weeks or months, and disappear without the more active forms of the disease succeeding, while, under other circumstances, they quickly ensue with much violence. During the first stage of the disease, the pulse differs but little from the healthy state. It is sometimes rather weak, and slower than natural, or it is quick and tense. The bowels are generally regular.

Second stage.—These symptoms sometimes continue for a few days only, especially if the patient has taken much exercise. What I term the second stage then begins, by an aggravation of the preceding symptoms. The great loathing, nausea, and disagreeable sensation, are much increased, and soon succeeded by vomiting or distressing retching to vomit, without throwing much off the stomach.—The vomiting often returns every hour or two during a whole week together, and the patient experiences some relief after each effort. During this stage of the disease, the strength is much prostrated ; the patient complains of great distress and a burning sensation at the stomach ; the bowels become obstinately costive ; the thirst is frequently great ; hot belchings and hiccough are often troublesome ; the tongue is slightly furred, and the breath has a peculiar, disagreeable smell, resembling that of a person under a mercurial course.

The countenance is generally somewhat flushed, and the patient inclined to be stupid and comatose. There is often dyspnœa, and the respiration is quite laborious.—The pulse is slower than natural—weak—easily compressed—becoming more frequent and somewhat tense about the third day from the commencement of the vomiting. The extremities are generally inclined to be cold, and the skin is generally as cool as natural, and dry.

The vomiting will often continue six or eight days, the patient remaining unable to take any solid food, and liquids are speedily thrown from the stomach. As the patient is somewhat relieved after each spell of vomiting, he falls into a doze. These symptoms will continue, in favourable cases, from the seventh to the ninth day, with greater or less violence, when they suffer some abatement, and the patient is able to retain some food on the stomach, and has generally a very speedy convalescence. Sometimes the disease, instead of taking the abovementioned course, assumes symptoms of a more fatal character, which I shall describe as the third stage or form of the disease.

Third stage.—About the third or fourth day from the commencement of the vomiting, the patient experiences a slight pain in the head ; for a short time becomes highly delirious, with continual tossing and moaning. The pulse is rather tense and frequent ; the eyes protruded, suffused, sometimes the pupils are dilated ; the patient manifesting many symptoms of true phrenitis. In such cases, the vomiting is often not so great, nor the bowels so obstinately constipated. When these symptoms arise, they are apt to destroy the patient in three or four days, if not sooner. In other cases, about the third or fourth day, the patient will fall into a very stupid comatose situation, with a feeble pulse, and symptoms appearing to denote that a gangrene of the stomach has ensued. Such are, the cessation of the distress of the stomach, with occasional vomiting of black, porraceous matter. After the appearance of these symptoms, the patient is generally destroyed in a day or two. Such are the general symptoms and causes of this disease, when not interrupted by medical treatment, which produces variations to a greater or less extent.

The propensity to sleep is often destroyed for several days after an attack of the active form of this disease, and an uncommon degree of wakefulness is experienced. No chilliness occurs at the onset of this complaint, neither during its course, nor does it appear subject to any thing like periodical exacerbations, and in general there is no remarkable indication of superabundance of bile. In some few cases, however, there is a considerable discharge of green bilious matter by vomiting though generally, the material thrown out of the stomach, consists of liquids that have been swal-

lowed, which are often hot, acrid, or sour, when ejected. From the throat and fauces there is commonly a discharge of thick viscid phlegm.

"From imprudent exposure, those who have had this disease in its active form, are liable to relapses, but perhaps not more so, than in our common autumnal diseases. The patient usually convalesces with speed, seldom requiring tonic medicines.

"This affection attacks indiscriminately both sexes, and all ages and conditions; though it is more severe upon middle aged adults, than old persons or children. The degree of danger is to be estimated by the violence of the symptoms, especially from the presence of such as denote gangrene of the stomach, or great disturbance of the brain. Though the hiccough is often a very troublesome and distressing symptom, yet it does not point out any particular danger. The first stage, seems to be a kind of chronic condition, and does not continue for any definite period. The more active forms of the complaint are very regular in duration, and seldom exceed the ninth, or stop short of the seventh day, unless in cases of fatal termination. The mortality from this disease is perhaps not so great, as might be expected from the nature of the symptoms. About one case out of twenty or thirty is lost, of those who experience the disease in its active form."

Western Quarterly Reporter.

Climate best suited for Patients afflicted with Pulmonary Consumption.—It is not a little remarkable, how many different places have been recommended as best calculated for the relief of persons labouring under pulmonary consumption; and notwithstanding each recommendation has been enforced as grounded upon ample experience, yet that the chosen spot for so desirable an end, is the subject of still greater difference of opinion at this present moment, than at any former time. At one period, it was very generally admitted that Madeira held out the greatest hopes to the unfortunate sufferer; but these hopes were blighted by the work of Dr. Gourley, an old and experienced physician, who, from a series of well observed facts, amply showed, that little relief was afforded by a residence in that island, and that even the natives themselves were rapidly, and in great num-

bers cut off by that very insidious disease. Madeira is now, we believe, scarcely ever thought of as a suitable situation for the phthisical invalid; the same remark may be made concerning Montpelier, once so renowned; and, in short, the whole climate of Italy has recently been assailed, as furnishing little or no benefit to consumptive persons. A part of this censure must be deemed unjust; the sufferer has doubtless often failed of enjoying the blessings of a benign climate, because of some peculiarities of constitution, or of the advanced stage of the disease. There can be little doubt that there are districts of country in the American States, as well qualified to benefit the consumptive, as any of the situations in the European world; and were this belief more general, we should not so often hear of the sad consequences that have resulted to many of those who have exiled themselves from their friends and home, and encountered the fatigues of long journeys, in quest of advantages which they never realized.

These few reflections suggested themselves from a perusal of a valuable paper on the Climate of Savannah, as a place of residence for consumptive patients, lately addressed to the Editor of the Philadelphia Journal of the Medical and Physical Sciences, and written by Dr. *William C. Daniel.* This paper we shall here insert entire.—Ed.

"I have for some time designed addressing you upon the subject of sending persons with pulmonic affections to pass the winter months in the South. My observations have satisfied me, that the instructions usually given are not the most judicious, nor best calculated to realize the views of the physician, or fulfil the hopes of the invalid.

"The doctrines I believe generally taught in the schools of the North, to be—that while a southern climate is to be sought, patients are particularly directed to avoid the *brackish air* of Savannah, and such situations as Augusta and Columbia are recommended in preference. This, previous to my residence here, was my own opinion; but all that I have seen has convinced me that I was mistaken, and I am now fully satisfied that this place has de-

cided advantages for consumptive patients over any other in the Southern states, either more removed from the sea-board, or more immediately exposed to the sea air. It is alike exempted from the keen mountain air of the interior, and the sudden changes and dampness of the sea shore. The winds coming from the mountains are broken, and in a great degree devested of their bleak, chilling character, by their passing over our fine barrens, which extend one hundred and fifty miles to the west and northwest—and the space between this and the ocean, tempers very much, and deprives of their dampness, those winds coming from the northeast and east, and southeast. Be the causes, however, what they may, I repeat, that experience has fully proved that the atmosphere of Savannah is infinitely better calculated for consumptive patients, than either that of Charleston, Columbia, or Augusta It exercises a soothing, lulling influence, upon them, which all who have breathed it acknowledge. I have very frequently been called to visit such patients from the North, on their way to Augusta, or some other interior position, and I have seen the same persons return to Savannah with very little, if any alteration, of their symptoms, who upon remaining here for a few weeks have exhibited the most remarkable amelioration of condition. I have again seen others who had travelled to the south by land, returning home in the spring by this place, and who after an abode here of a few weeks, have professed to feel themselves much improved. It appears almost unnecessary that I should say, I consider such relief usually as only temporary—temporary, however, as in most cases it may be, it is of great importance to the sufferers—and where we cannot relieve, it is most desirable to respite suffering. But I do believe that much more advantage, and frequently of a more permanent character, would be derived, if the visit to our climate were made at an earlier stage of the disease than it commonly is ; and I am also persuaded that many lives might be saved, if such patients could be prevailed upon to pass the summer and fall months with us as well as the winter. The fear, however, of an autumnal fever, prevents this ; which fever, if I may place faith in the opinion of many respectable medical men, and in my own limited experience, usually effects a cure, by transferring (as we suppose) diseased action from the lungs to the liver. I have seen several cases in which an attack of bilious fever re-

stored to health persons obviously in the first stage of consumption ; and in such, the debilitated state of the system, and the abstemiousness of their habits, forbid a degree of fever sufficient to place their lives in serious jeopardy. I am, however, going beyond the limits I had prescribed to myself. Yet, permit me further to remark on this point, that I have known several persons in the first stages of consumption, leave this place in a condition much improved from that with which they came, who have died the succeeding summer in the middle or northern states. What would have been the influence of *our* summer upon them? It differs very materially from *yours*—and since it is capable of imparting so much robustness and vigour to invalids from our fevers, may it not produce an excitement in consumptive patients after a southern winter highly injurious to them? These, however, are questions which extensive observation can alone answer.

" The most remarkable influence which the air of this place appears to exercise, is in giving repose to the patient. I have known them reach here harassed almost to death, with restless, sleepless nights, and upon the night succeeding to their arrival, they have enjoyed refreshing slumbers—and from that time many of their most distressing symptoms have been astonishingly alleviated. This was particularly the case with a young gentleman of New-York, who being considered upon the verge of a consumption, came to pass his winter with us. A residence here that season, improved him much more than did the previous one passed upon the borders of the Mediterranean. He left us under favourable promises of a recovery, and to realize which, he was induced to make a voyage to India, from whence he returned in the following February in a very emaciated condition. Such were his sufferings in New-York, that he was induced to sail, almost immediately after his arrival from India, to this place. He informed me that his cough was exceedingly troublesome and harrassing. He had considerable fever, with profuse night sweats, which were very debilitating. He said, that for six weeks previous to my seeing him, he had not enjoyed more than two hours of repose in the twenty-four. On the night of his arrival he rested well, and his perspiration was inconsiderable compared with what it had been usually before—his cough had evidently abated, and he already felt much more comfortable. In a few days his appe-

tite returned; his sleep, which was extended to the usual healthy term, was refreshing; his perspiration subsided, and his cough ceased to be troublesome. His improvement advanced so rapidly, that he was very soon quite a different man; and in a few weeks after his arrival, he sailed for Charleston upon a visit of pleasure. The influence, however, of the air of that place was such as to occasion his speedy return to Savannah. On his arrival here, he informed me that he ceased to feel so well soon after his leaving us, and that in Charleston he experienced the same inability to sleep, the same profuse perspiration, and the same troublesome cough, which had affected him previous to his coming from New-York. The symptoms again subsided as suddenly as upon his previous visit; and during a residence here of some months his improvement was constant and rapid. He entered into society, and partook liberally of its pleasures and enjoyments, without inconvenience. He sailed for New-York in the summer of 1820, since which time I have not heard of him. He left us under strong hopes that his disease was subdued; which, however, I did not feel myself authorized to sanction.

"This is undoubtedly an extreme case, and it is not just to suppose that others would derive a similar benefit, under similar circumstances, from a visit to this place. Yet I feel no hesitation in saying, (and I do it upon the authority of many sufferers,) that the atmosphere of Savannah is better calculated for consumptive patients, and those disposed to pulmonic complaints, than that of any position in the southern states of which I have any knowledge."

Savannah, May 22, 1822.

Letter addressed to the Editors of the New-York Medical and Physical Journal. By Samuel L. Mitchell, M. D. LL. D. Professor, &c.

New-York, Oct. 12, 1822.

Our collection at the College has been latterly enlarged by the following specimens and communications:

1. The natural productions, consisting of articles in Icthyology, Ornithology, Entomology, and various other departments of the sciences, collected by Alexander Vache, Esq. during a voyage in

the United States Ship Franklin, to Valparaiso, in Chili, and back to New-York, by the way of Cape Horn, in the United States Ship Constellation.

2. A collection of plants, in the form of a Herbarium, brought from East Florida, where they grew, by Charles Vignoles, Esq. who gathered them.

3. A parcel of specimens from Choco, and its neighbourhood, in the new Republic of Colombia, South-America, brought by Col. Woodbine. They consist of the vegetables reputed to be most efficacious against poisons and venomous bites ; of the different sorts of woods, useful for timber and in the arts, entirely different from the species growing in our forests ; and of a variety of other rare and curious things. This gentleman convinced me by his maps and expositions, that the intercourse between the Atlantic and Pacific Oceans, could be accomplished through the route summarily sketched through the Viceroyalty of New-Grenada, by Baron Humboldt. Col. W. has examined, on the spot, the tract of country which Baron H. only knew by description ; and the report is conclusive in favour of an easy passage, where the Andes seem to lower their heads for the purpose.

4. William Zollickoffer, M. D. of Fredericktown, Md. has sent his treatise on the *Prussiate of Iron*, (or Prussian Blue,) which he strongly recommends as a remedy for intermitting and remitting fevers, in doses of 4 grains to 6, twice or thrice in 24 hours. He thinks it preferable to *arsenic*, in any of its forms, and even extols it above the *Peruvian Barks.* Dr. Z. sums up the excellencies of this medicine, in these words : " The prussiate of iron possesses the following advantages over the Cinchona officinalis, as a remedy in intermitting and remitting fevers : first, it is void of taste, and may therefore be much more readily exhibited than the pulv. cinchon. offic. which to some is extremely unpleasant : secondly, it may be given in every stage of the disease, while the administration of bark is confined to the apyrexiæ : thirdly, the dose is much smaller, being from four to six grains, twice or thrice in twenty-four hours, or at morning, and noon, and night ; while bark, to be effectual, must be given in much larger doses : fourthly, it never disagrees with the stomach, or creates nausea, even in the most irritable state of this viscus, while bark is not unfrequently rejected : fifthly, in its effects as a remedy calculated to prevent the recurrence of future paroxysms, it is more certain,

prompt, and effectual, than the justly celebrated cortex Peruvian: sixthly, and lastly, a patient treated with this article will recover from the influence of intermitting and remitting fevers, in the generality of cases, in much less time than is usual in those cases where the bark is employed. In making use of the Prussiate of iron, as a remedy in disease, care must be taken to select that which is of a very dark blue, approaching to a black, having a shining coppery fracture, and adhering firmly to the tongue.

5. Baron *Andreas Joseph De Stifft*, first physician to the emperor Francis, and president of the Medical Faculty of Vienna, has sent the third edition of the *Pharmacopœia Austriaca*, in return for a copy of the Pharmacopœia of our United States. This was done through Baron *Jos. Franc. de Jacquin*, with a most obliging letter, and our friend, the Austrian consul general at New-York. This elaborate work will furnish excellent matter for the meditated improvement of our national performance, in another edition.

6. By the annual report of the London Vaccine Institution for 1822, it appears, that the confidence of the governors and managers remains undiminished. Their words are these: "The medical council of the London Vaccine Institution admits not of any controlling or modified power of vaccination. It is as sovereign a prophylactic, as complete a preventive, as is the small pox itself, against its own future occurrence." [p. 7—8.] In this great and glorious warfare against small-pox, too much cannot be said in praise of the Director, John Walker, M. D. and the Registrar, Andrew Johnstone, LL.D.

7. A Spanish publication of high importance, from Lima, has been brought by L. Osborne, Esq. surgeon in the U. S. navy. It is the second edition, printed in Madrid, of the *observations on the climate of Lima, and its influence on organized beings, more especially man*, by the distinguished Doctor Don Hipolito Unanue, professor of medicine in the royal university of Saint Mark, director of the medical and surgical college of Saint Fernando, honorary physician of his majesty's chamber, fellow of the royal medical academy at Madrid, and Proto-medico of Peru. The author is now the minister of finance in his regenerated country; and his book is a treasury of valuable information—4to. 1815.

8. The receipt of numerous other things: such as the *American*

Knight-fish, or EQUES LANCEOLATUS from Curracoa ; *the* CAECILIA TENTACULATA, or *tail-less and eye-less snake*, from Brazil ; and the SIREN of South Carolina, forwarded by Dr. Thomas of Pineville ; the horn of the mountain-ram of California ; all add to our stores of zoology and anatomy.

9. I began to think I had written enough for this time, when tracts from Brussels, in the Netherlands, of the important discoveries made by Professor C. S. Rafinesque, of Transylvania University, presented themselves to my eye. The disclosures in natural science are contained in a series of tracts or memoirs on various subjects, among which are these: 1. A monography on the roses of North America. 2. A description of several new species of Houstonia. 3. An account of the fossil turbinolites of Kentucky. 3. A particular history of the Bivale and other molluscas inhabiting the river Ohio, containing twelve genera and sixty-eight species ; and among the rest, figures, &c. of the extensive and beautiful genus of UNIO. 4. Botanical remarks on different points of the science, scientific and practical. 5. Remarks on Polystomous and Porostomous animals, and on some errors into which authors have fallen in relation to fishes. 6. Observations on certain hybrid animals ; and an enumeration of the several modes in which the stamens of plants are connected or associated. 6. He has constituted into a new or undescribed species, the MANUS, or *scaly lizard*, from Africa, which Capt. Cahoone, of the revenue cutter, gave to the writer, and the latter, in the donor's name, placed in the Cabinet of the Lyceum of Natural History.

A Description of a Muscle connected with the Eye, lately discovered by W. E. HORNER, M. D., one of the Professors of Anatomy in Philadelphia.

I HAVE lately had occasion, in a dissection of the human eye, to observe a part of its muscular apparatus, which I believe not to be generally known to Anatomists, judging from the reports of my professional brethren in this country, and from a reference to the more approved authorities among the systematic writers, as Sœmmering, Albinus, Caldani, who has quoted from the first, Bichat, Sabatier, &c., of the continent of Europe ; and Munro and Bell, of Great Britain.

"The part alluded to is a small oblong muscle, found on the

posterior part of the lachrymal ducts. It arises from the os unguis near its junction with the os planum, and passing forwards and outwards, terminates at the internal commissure of the eyelids, near the puncta lachrymalia. As it approaches the eyelids, it splits into two parts ; one is inserted into the upper lid, and the other into the lower ; the superior fibres of the first named part, or the upper, being blended, in some measure, with the orbicularis muscle, but the lower having fully a distinct and well-marked insertion. The muscle is about a half an inch long, and one-fourth of an inch wide, its upper and lower margins being well defined. I have also had occasion to make some new remarks on a tendinous structure enveloping the lachrymal ducts, and the position of these ducts, by which the curvature of the internal commissure of the eyelids is kept up, and which would prevent any deformity of the lids, even if the tendon of the obicularis were cut through in the operation for fistula lachrymalis. The origin of the muscle is at least half an inch posterior to the orbicularis tendon, at its attachment to the nasal process, and it lies on the tendinous matter including the ducts. To get a view of this muscle, cut through the eyelids, and separate them from the ball, except at the internal canthus ; then turn the lids over on the nose ; remove the valvula semilunaris and the tunica conjunctiva in the neighbourhood, with the fatty matter, and you will be sensible of the arrangement described. Its use is to draw in the puncta, and to keep the edges of the eyelid properly adjusted to the ball, &c."

We find the foregoing in the London Medical Repository for July, 1822. In a note. the Editor, Dr. Copland, subjoins the following explanations and opinions :

" Mr. Shaw favoured us with this communication, which was contained in a letter from Professor Horner to him. We have placed it among the *Original Communications*, because its author wished to have it announced in a British journal, previously to its appearance in a future volume of Transactions of the Philosophical Society of Philadelphia.

" Mr. Shaw has also favoured us with the following opinion respecting its originality, in which we entirely concur :—' I think that the muscle described by Professor Horner, is the same which

has been already depicted in Rosenmuller's plates; but the description given here is so different, and so much better, that I have no hesitation in admitting Professor Horner's claim to the merit of having discovered it, without having derived any assistance from the labours of other Anatomists."

University of the State of New-York—College of Physicians and Surgeons of New-York.—The College of Physicians and Surgeons will commence their Course of Lectures for the ensuing Winter Session, on the first Monday of November, (the 4th,) at the College in Barclay-Street.

Dr. Post, on Anatomy and Physiology.

Dr. Hosack, on the Institutes of Medicine and Practice of Physic.

Dr. Macneven, on Chemistry.

Dr. Mitchell, on Botany and Materia Medica.

Dr. Hamersley, on the Clinical Practice of Medicine.

Dr. Mott, on Surgery.

Dr. Francis, on Obstetrics and the Diseases of Women and Children.

The Board of Trustees deem it proper to make it known, that in conformity with the Ordinances of the Hon. the Regents of the University, passed in March, 1822, every Student is required to attend two full Courses of all the Lectures delivered in this College, before he can be a Candidate for the Doctorate: unless said Student shall have previously attended Lectures in said College, prior to the Session of 1822—3. or shall have previously attended one entire Course of Lectures, delivered in some other respectable Medical School or University.

The Matriculation Fee is Five Dollars, which includes the Use of the Library.

N. B. Under existing circumstances, the Course of the Clinical Medicine is sub-graduate.

Dr. Thomas' Treatise on Domestic Medicine.—The venerable and experienced author of the *practice of physic*, so generally known in this country and in Europe, has lately published a

work of some extent with the above title. The reputation of Dr. Thomas has been long established ; and on the present occasion, we must admit that he has given a treatise on popular medicine which promises to surpass all former undertakings of a similar kind. To this American edition, the American editor has made several valuable additions, calculated to render the work still more generally useful. The additions, we are informed, have been furnished from the MS. improvements of the author himself.

Boylston Prize Questions.—The following questions have been announced for 1823.—1. On the functions of the extreme capillary vessels in health and disease.—2. What textures of the body, when punctured or lacerated, are most liable to bring on the disease called Tetanus ?

The following questions for 1824 are also announced by the committee.

3. On the diseases resembling syphilis, and the best means of treating those diseases.

4. How long may the human body remain immersed in water without extinction of life ? And at what period after immersion, would it be useless to employ restorative means ?

Dissertations on these questions are to be transmitted to D. Townsend, M. D. of Boston, on or before the first Wednesday of April in each year.

We understand that Dr. EBERLE's work on *Therapeutics and the Materia Medica* is ready for the press, and will make its appearance in December next, in two vols. 8vo. about 440 pages each.

The editors hope to be enabled to present their readers with additional facts from Drs. Cotton and Harlow, concerning the remarkable case of extra uterine conception, published in the present number of this Journal.

FOREIGN.

Baron Larrey on Yellow Fever.—Baron Larrey has lately published a small work on the yellow fever, entitled *Considerations sur la Fievre Jaune.* Not having been so fortunate as to see the original work, we avail ourselves of the following analysis of it, contained in one of the late English Journals.

"Mr. Larrey thinks, in common with many of his countrymen, that the YELLOW FEVER consists in inflammation, of greater or less severity, of the biliary system, the intestinal canal, and the serous membranes. He considers himself justified in this opinion by the results of the examinations he has made after death; an evidence, we think, not to be too implicitly depended upon. M. Larrey says, that the principal causes of this disease are, hot and moist climates, intemperance, spirituous liquors, &c. On the subject of contagion he holds some peculiar opinions. He divides virus into two kinds; the one fluid, as in syphilis, small-pox, and vaccina; the other gaseous, or miasmatic: of this last sort is the virus of the yellow fever. Each virus has a particular influence on certain parts. That of the yellow fever acts particularly on the nervous system of animal and organic life: it is connected with the lymphatic system. According to M. Larrey, it is the most subtle and fugacious of all. It lasts but a moment at the highest point of disease; and then loses the power of transmitting itself. It is principally seated in the exanthema when this exists, and in the cutaneous transpiration. It is in this manner that M. Larrey endeavours to reconcile the contradictory opinion of physicians on this subject. He is, however, an advocate for measures of precaution; for if, says he, one patient only out of a hundred be capable of transmitting the disease, prudence requires that the whole should be sequestered, as it is impossible to ascertain the individual by whom the disease may be perpetuated.

"The TREATMENT of the disease which M. Larrey recommends, is consistent with the view which he adopts of its nature. In the first instance, bleeding from the jugular vein, or from one or both of the temporal arteries, with the application of ice or iced water to the head, produce the best effects. The irritation and inflam-

mation of the intestinal canal may be best combated by the application of puncture cupping to the lumbar and hypocondriac regions, in parallel lines, following the course of the nervous fluid, from the positive to the negative pole.* In the second period, M. Larrey recommends slight purgatives, e. g. calomel, from two to ten grains, according to circumstances, cold drinks, and emolients. In the third stage, slight tonics, cinchona, bitters, camphor, and neutral salts. In the last place, for the precautions necessary to the preservation of health, the Baron refers us to the work of Dr. Descourtils, entitled, "Guide Sanitaire des Voyageurs aux Colonies. 1816."—*Quarterly Journal of Foreign Medicine for April*, 1822.

Professor Osiander on Uterine Vagitus, and the respiration of the Fœtus.—"At the sitting of the Royal Society of Sciences of Gottingen, on the 11th of November, 1820, the Director, Professor Osiander, read a memoir, containing a series of observations on the vagitus, respiration, and vitality of the human fœtus, during and immediately after parturition. He has, in this paper, given the results of his experience on these points for upwards of twenty years. The principal facts are the following :

"1. The human fœtus, whether full grown or premature, can breathe and cry when the head has passed the external parts, although it be closely confined from the narrowness of the parts, and whether the delivery has been effected by the natural efforts, by the hand, or by the forceps. The author has confirmed this assertion by twelve cases, for the most part observed in the lying-in hospital.

"2. In difficult delivery, effected by the forceps, the child cries at the moment of the passage of the head, although the forceps have not been removed.

"3. In nine cases the child breathed and cried as soon as the head was born, although the funis was twisted at least twice round the neck, and in some of the cases very tightly ; in four cases the cry was heard, and the child seen to breathe immediately after the funis was disengaged.

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* *Quart. Journ. For. Med.* Oct. 1820. v. ii. p. 394.

"4. Two children of unusual size, of which one weighed ten pounds, cried as soon as born, although one had been fixed in the pelvis for two hours, from the narrowness of the genitals, and although the anterior fontinelle was perfectly ossified.

"5. Two children cried immediately after birth, although the neck was compressed by the arm and hand, the latter having been expelled with the face.

"6. *Four children* born with the membranes unbroken and transparent, *being surrounded by the liquor amnii, were seen to open and shut the mouth as a fish under water.*

"7. This phenomenon was not observed in another, born under the same circumstances.

"8. Two, on the contrary, opened the mouth, breathed, and cried, notwithstanding the face was covered with the empty membranes.

"9. One child, born, and covered wholly by the membranes, ruptured them, and drew them over its face.

"10. One child cried as soon as the head was expelled, although its mouth was filled with blood escaping from the mother.

"11. *Some children delivered by the feet breathed and cried, although the head was still in the uterus.*

"12. In one instance, the waters having escaped, and the pains being very severe, *the child was heard to cry in the uterus so distinctly, that many students present authenticated the fact by their signature in the note-book of the Institution.* The crying was heard under the same circumstances, in his private practice, by Professor Osiander, by the mother, and the standers by.

"13. A dropsical child, extracted with much difficulty, gave signs of life.

"14. A dead fœtus, affected with anasarca and ascites, according to the mother, moved distinctly before birth.

"15. A child died during labour, and was extracted quite dead. Although no air had been inflated, the lungs were found considerably distended, and floated in water, a proof that respiration had been perfectly performed in the uterus before birth.

"16. A deformed child, like a dead fœtus, breathed after birth with a sensible noise, and died in a few moments. On dissection no traces of air were found in the lungs, although they were very expansible.

" 17. A child, prematurely born, had the skin of an orange colour, and the cuticle was detached in many parts ; it lived, sucked, and left the institution alive at the same time with the mother.

" 18. A blind woman was prematurely delivered from the effects of fright. The child breathed freely during delivery, but died in a few moments : the lungs sunk completely in water.

" 19. In a child born dying, blood flowed from the umbilical vein, although the circulation had ceased in the umbilical artery.

" 20. A child was extracted with the placenta, the cord being neither cut nor tied. Pulsation was observed for ten minutes in the umbilical arteries, but it was not until the child had freely breathed that the dark blue of the blood was changed into a bright red colour.

" 21. The heart and carotids pulsated for a length of time without respiration, but there was no pulsation in the umbilical arteries. Blood flowed when the jugulars were opened, but it was impossible to restore the child to perfect life, although powerful contractions were excited in the muscles for many hours, by the galvanic pile ; the other signs of life were wholly lost.

" 22. A child had advanced very slowly during labour, and at last seemed altogether fixed. On examination, the very extraordinary observation was made, that the child held the umbilical cord firmly with its hand, so that it was necessary to open the fingers to set this part at liberty. At the institution of Gottingen, where it is customary to weigh all the children that are born, it is not uncommon to see some of them clasp the cords of the scales so firmly, that it is necessary to employ some force to oblige them to quit their hold. Should we any longer wonder that Hercules strangled serpents in his cradle ?"—*Quarterly Journal of Foreign Medicine, for April*, 1822.

Dr. Richardson on the Climate of Egypt and Nubia in Pulmonic Diseases.—Nothing can exceed the beauty of the mornings and evenings in Nubia. The air is light and clear, and cool, and all the senses, as if bathed in the breath of heaven, cling with rapture to every blade of grass, or every opening plant. During the whole of yesterday the sky was without a cloud, and in the evening the constellations were particularly bright. All of us had seen the sky of Italy and Greece, but for brightness, the nocturnal sky

of Egypt and Nubia surpasses them all, as much as they do that of England. Many a pulmonic patient, who feels his sickly fabric chilled and pierced by the snow-winds of Vesuvius, would be soothed and healed by the unirritating and balmy air of Egypt and Nubia. Nor is the distance so apalling; it only seems far to those who have not tried it. The traveller will go in a shorter time, and with less fatigue, from Marseilles to Alexandria in Egypt, than at an average rate of travelling, he can go by land from Geneva to Naples. The accommodation is always good, and there is no chance of incurring fresh exacerbations of disease; all the way up the Nile he carries his house along with him, leaves it, and returns to it when he pleases. His mind is constantly engaged with the unremitting succession of new and interesting objects that occur in every step of his journey, and that without one single circumstance to discompose or annoy him; every where, he can purchase, at a moderate rate, such articles of provision as are necessary for his comfort, excepting wine, and that he can easily carry with him from Alexandria and Cairo. His medicines he ought to take from London.—*Travels in Egypt and Palestine, by Dr. Richardson, vol.* i. *p.* 392.

Black Urine.—It appears from Dr. Marcet's paper in the Medico-Chirurgical Transactions, that he has met with some cases in which black urine had been voided. At the request of Dr. Marcet, some was examined by Dr. Prout, who gives the following account of its chemical properties:

The residuum obtained from this urine by evaporation, not only does not contain any lithic acid, as was observed by Dr. Marcet, but no urea can be detected in it by the tests which indicates its presence.

Although the addition of dilute acids produced no immediate change of colour in the urine, yet, on standing for some time, a black precipitate slowly subsided, leaving the supernatant fluid transparent, and but slightly coloured.

The black precipitate thus obtained, was found to be nearly insoluble, either in water or alcohol, whether hot or cold. It readily dissolved in cold concentrated sulphuric and nitric acid, forming a deep brownish-black solution; but, on diluting the acids with water, the black substance appeared to be again precipitated unaltered. These acids, however, by the assistance of

heat, apparently decomposed it. The black substance readily dissolved in the fixed alkalies, and in the alkaline subcarbonates, forming very dark solutions. The addition of water did not affect these solutions ; but acids re-precipitated the substance apparently unchanged. When ammonia was employed as the solvent, and the excess expelled by evaporation to dryness, a black or deep brown residuum was obtained, which appeared to be a compound of the black substance with ammonia, and possessed the following properties :

It was very soluble in water ; and, on being heated with caustic potash, it gave off the smell of ammonia. The black compound, however, did not appear to have any tendency to assume the crystalline form.

In evaporating to dryness, on a piece of glass, the ammonical solution in which the black substance had been dissolved, the residuum split into most minute fragments, having a regular and very peculiar appearance, especially when examined with a magnifier.

From the solutions of this compound in water, muriate of barytes and nitrate of silver produced copious brown precipitates, as did also protronitrate of mercury and nitrate of lead ; but oxymuriate of mercury produced no immediate precipitate, and that obtained from acetate of zinc was of a paler brown colour.

From these experiments, Dr. Prout concludes that the remarkable specimen of urine in question owes its black colour to a compound of a peculiar principle with ammonia, as Dr. Marcet had inferred from his own trials ; but he is, moreover, inclined to think that the black principle itself, such as is obtained from the urine by the action of dilute acids, may be considered as a new body possessed of acid properties. From the small quantity of the specimen, however, which could be spared for Dr. Prout's experiments, it was impossible to obtain complete and decisive evidence on the nature of this substance ; but it appears to be sufficiently characterized as a peculiar acid, and to bear a closer analogy to the lithic acid, or rather to some of the compounds which it forms when acted upon by the nitric acid, than to any other principle usually found in the urine.

Should this view of the subject be confirmed by further obser-

vations, Dr. Prout would propose to distinguish this new substance, on account of its black colour, by the name of *Melanic acid*.—(*Annals of Phil.*)

M. J. A. Lejumeau de Kergaradec has lately published a small memoir upon the application of Auscultation to the Study of Pregnancy. By means of the *stethoscope* or *pectoriloque* of Laennec, he is of opinion, that the pulsation of the heart of the fœtus may be distinguished from those of the arteries of the mother; and that, by an attention to the different sounds communicated to the ear, we may determine, in doubtful cases, whether the fœtus in utero is alive or dead. MM. Kergaradec and Laennec are both of opinion, that the *stethoscope*, and the immediate application of the ear, are attended with the same advantages; but M. Fodera considers, that although, for the purposes of delicacy, the *stethoscope* may be somewhat preferred, yet that we may frequently be able to detect diseases by the immediate application of the ear, which we are not able to do with the *stethoscope*; and he consequently gives the preference to auscultation performed in that manner, in all cases where the *stethoscope* may be considered necessary.—*London Medical Repository, for August*, 1822.

Instances of Children born without the Œsophagus.—A male child was born in August, 1820, at the full period of utero-gestation. It was of the full size, and took the breast with avidity; but each time the milk was immediately returned by the nose and mouth, with rattling in the throat, and symptoms of impending suffocation. It, however, lived in this state for eight days. During this time, the alvine and urinary secretions were regularly voided, although in smaller quantities. Derangement about the œsophagus was suspected, and in order to ascertain its nature, an inspection was instituted after death. *Dissection.*—The liver was very large, and reached rather below the umbilicus, but its form and colour were natural. The stomach was without a cardiac orifice, and at this part was united to the diaphragm by means of cellular tissue. The lung on the right side was distended, and presented a reddish colour; that on the left was compact, and dark in its appearance, evincing that the child had only breathed with the right lung. The heart possessed its usual characters at that age. The

œsophagus was entirely wanting, and the pharynx formed a cul-de-sac at its inferior part.—*Hufeland's Journal*, 1821.

An instance entirely similar to the one just related occurred sometime since, to Dr. Hallam, of Walworth. This child lived six or seven days. During that time, whatever was attempted to be given was returned in the manner already described. The alvine and urinary secretions were regularly voided, but in smaller quantity. On inspection, after the child's death, the œsophagus was found wanting, as in the case recorded by Hufeland. The pharynx and stomach, with the intervening parts, were preserved by Mr. Hallam, and are in the possession of Sir Astley Cooper.

These cases are interesting, chiefly on account of the regular appearance of alvine evacuations which occurred in them both. This circumstance furnishes a very conclusive proof, that at least the chief part of the intestinal excretions consists of secretions from the mucous surface of the digestive tube, especially from the follicular apparatus, and of the excrementitious parts of the hepatic and pancreatic secretions.—*Lond. Med. Rep. for Aug.* 1822.

Excision of Bronchocele, by Mons. Dupuytren, of Paris.—A female applied at the Hôtel Dieu in Paris, for the removal of a large bronchocele, by which she had long been distressed. Her employment was rural, her temperament bilio-sanguineous, and constitution sound. Eight years previously, a tumour, large as a filbert, was perceived on the anterior and middle portion of her throat. During six years its growth was constant, but gradual and slow; in the seventh, it rapidly increased. Its progress now was rapid; it covered the whole front of the neck, and had three distinct lobes. The central one only was painful; it extended over the sternum, four inches in diameter.

A Parisian surgeon removed the diseased parts. No hæmorrhage followed; and at the end of a month the wound cicatrized.

About six months afterwards, the two lateral lobes acquired an enormous size; the central also enlarged; deglutition was embarrassed, and the respiration rendered laborious and afflictive. Urged by these circumstances, and the unhappiness arising from a sense of deformity, she declared to the surgeons her fixed resolution of submitting to excision of the tumour, whatever should

be the result. Drs. Pelletan and Dupuytren gave their explicit opinion that such an operation was altogether impracticable. Nevertheless, she returned in a few days, and entreated its performance. It was again declined; and the danger to which it would expose her described in the strongest terms. Palliatives were prescribed; but neither apprehension of pain nor of danger, nor formal refusal, could alter her purpose. Displeased and desperate, she appeared a third time, and pressed her original request. Such great perseverance at last excited a deep interest in her behalf; and she was admitted, on January 1, 1808, into the hospital, where the state of her neck was again minutely examined.

The anterior and lateral regions of the throat were occupied by a tumour, stretching perpendicularly from the inferior maxilla to the sternum and clavicles, and transversely from the one maxillary angle to that of the opposite side. It measured seven inches in length, and the same in breadth, and consisted of three soft and knobbed lobes. The central was least protuberant; it adhered to, and moved stimultaneously with, the larynx. The lateral lobes were attached to the contiguous parts, and admitted motion in all directions. The integuments were flaccid; the jugular veins, and their ramifications, much dilated; the pulsations of the superior thyroid arteries, above the tumour, were violent and perceptible; the carotids throbbed with great activity and distinctness. Pain was not felt in the tumour; but it sensibly impeded respiration, obstructed deglutition, and, when the patient experienced lively emotions, produced irregularity of the cerebral circulation. Her face, on such occasions, assumed a deep red hue; and dazzling of the eyes, with vertigo, supervened.

The recent progress of this dreadful affection, with the sense of imminent suffocation experienced by the patient, formed certain indications of a fatal issue. On the other hand, the situation, size, and connexions of the tumour, displayed the danger of attempting its excision. After mature deliberation, therefore, it was once more pronounced impracticable. This declaration overwhelmed the unfortunate sufferer; she was seized with gloomy despair—with profound melancholy; she adopted the resolution of accelerating death by inanition, and firmly rejected all kinds of food. Her menstrual discharge, hitherto regular, now

became suppressed. Violent spasms succeeded, with a fearful sense of suffocation, convulsions, horror, and excruciating pains.

Immediate dissolution, in these circumstances, was inevitable. By the operation, she might possibly be saved. It was promised; and her mind became calm and animated. Her sound constitution, strength, youth, and earnest desire for relief—the great mobility of the tumour, its slight union with the integuments, and the knowledge of a partial extirpation of the parts having already been successfully made—all presented themselves asmotives of hope to M. Dupuytren, and determined him to undertake it. Accordingly, with the assistance of M. Rullier and others, it was performed, in the presence of Professor Pelletan and many surgeons of the French metropolis.

Operation.—The integuments of the anterior and middle parts of the neck being elevated, so as to form a transverse fold, they were divided perpendicularly in the centre down to its base. The incision was then prolonged upwards to the symphysis of the chin, and downwards to the superior border of the sternum. The skin of the left half of the tumour was now detached by careful dissection. In the course of this, two sets of veins were discovered; one lying close to the tumour, the other subcutaneous. Most of these were avoided; the rest were tied, and divided between the ligatures. On the left and posterior side of the tumour, four thyroid arteries, greatly enlarged, were easily recognized. Being denuded and doubly secured, they were divided between the two ligatures. In this manner the left half of the tumour was detached, with no other inconvenience to the patient than the pain induced by a protracted dissection.

The right lobe was then separated, with equal precaution. Its connexion with the circumjacent parts readily yielded to the finger and handle of the bistoury. Without difficulty, also, the internal jugular veins, carotid arteries, and pneumo-gastric nerves, were detected, and pushed aside from the way of the knife. Now M. Dupuytren ascertained the practicability of removing the whole mass. For this purpose the lateral portions of the tumour, which had been separated from their attachments, were turned up, and drawn forward so as to stretch the central lobe, which adhered closely to the larynx and trachea. The cellular substance, which connected it to these parts, was now divided with

the knife, when the wind-pipe came into view : its surface was flattened by the pressure upon it by the incumbent tumour. Lint was placed in the bottom of the wound, its lips approximated, a light dressing superadded, and the ends of the ligatures left in its inferior angle.

The patient endured this tedious and intricate operation with fortitude. She lost only a few spoonfuls of blood. Once or twice she was threatened with syncope, and was sick. After the operation, her face was pale, its expression altered ; her strength, in every respect, overpowered ; the pulse was frequent, small, and concentrated ; the respiration laborious and rapid ; the skin, cold. Cardialgia and constant nausea were established ; and she appeared overpowered by the mere effect of the operation. To recruit and support her strength now became the prominent indication. Cordials were administered in small proportions. She was threatened with suffocation, on taking even a spoonful of liquid ; and this could only be done by her when in a vertical posture. Towards the evening, however, her symptoms began to improve. Prostration of strength was now succeeded by re-action ; the pulse was frequent and full ; respiration nearly natural ; the countenance flushed ; the skin hot and dry ; and some spoonfuls of fluid were introduced into her stomach, without inconvenience. But the hopes thus awakened were of short duration. By the evening of next day, her breathing became painful and stertorous ; and she died.—*London Repository*, March, 1822.

Taddei's New Antidote to Corrosive Sublimate.—Professor Taddei, of Florence, has published an 8vo. pamphlet, proposing the gluten of wheat as a new antidote for that dreadful poison, the oxymuriate of mercury. We have not yet seen it, but there is a very full analysis of it by A. Cattaneo, in Omodei's Annals, minutely describing the origin of the discovery; the mode of preparing and administering the gluten, in which there seems to be nothing peculiar ; experiments with it on animals ; and a comparison of its efficacy with that of albumen, as proposed by Orfila. Taddei concludes his pamphlet with recommending the now almost disused corrosive sublimate in syphilis, care being taken to modify its effects by drinking largely of milk, barley water, and decoction of mallows, or burdock.—*Annali. Univ. di Medicina*, vol. xvii.

METEOROLOGICAL OBSERVATIONS

FOR JUNE, 1822.

Made at the New-York Hospital, by RICHARD PENNELL, M. D.

	Barometer.			Thermometer.			Winds.			Rain Gauge.	Hygrometer.*	Weather.
	7 A M	2 P M	9 P M	7 AM	2 PM	9 PM	7 AM	2 PM	9 PM			
1	30 20	30 20	30 16	68	84	70	s	s	s		772	cloudy
2	30 10	30 10	30 10	73	90	79	se	sw	sw		784	do
3	30 10	30 10	30 10	77	88	74	nw	sw	sw		720	clear
4	30 10	30 10	30 18	70	91	65	sw	sw	ne	—.24	760	cloudy
5	30 29	30 32	30 30	61	74	64	ne	se	se		648	do
6	30 32	30 30	30 30	64	73	64	ne	ne	ne		643	do
7	30 27	30 18	30 08	65	74	68	sw	sw	sw		643	variable
8	29 90	29 90	30 04	71	85	74	sw	sw	sw		620	cloudy
9	30 04	30 04	30 04	70	89	75	nw	sw	sw		595	clear
10	30 06	30 06	30 06	70	93	75	w	w	w		572	do
11	30 00	30 00	30 00	73	88	72	w	sw	sw	—.15	600	variable
12	29 97	29 97	30 10	73	93	73	n	n	n		584	clear
13	30 25	30 30	30 34	65	80	70	n	s	s		580	do
14	30 48	30 48	30 50	65	70	60	se	se	se		575	cloudy
15	30 50	30 50	30 25	65	85	75	se	sw	sw		584	do
16	30 02	30 00	30 00	70	89	72	sw	sw	nw		572	clear
17	30 00	30 00	30 00	70	88	72	nw	nw	nw		573	cloudy
18	30 00	30 00	30 00	64	72	64	nw	nw	sw		573	do
19	30 12	30 12	30 12	62	80	64	sw	sw	sw		586	clear
20	30 18	29 94	29 94	64	65	64	sw	se	se	1. 01	608	cloudy
21	29 94	29 90	29 90	64	80	70	s	s	s		616	do
22	29 90	30 00	30 08	70	85	72	nw	w	w		600	clear
23	30 18	30 18	30 18	70	84	71	w	sw	sw		594	do
24	30 18	30 18	30 18	72	85	75	sw	sw	sw	—.22	630	cloudy
25	30 18	30 18	30 18	70	74	67	ne	sw	sw	—.19	664	do
26	30 18	30 10	30 10	68	81	68	e	e	e	—.04	700	do
27	30 18	30 20	30 20	65	84	72	ne	ne	sw		696	variable
28	30 20	30 20	30 20	64	88	75	sw	sw	sw		628	clear
29	30 20	30 20	30 20	72	92	78	sw	sw	sw		628	do
30	30 20	30 20	30 20	75	92	78	sw	sw	sw		639	cloudy

The quantity of rain which fell this month, is 1 inch and 85--100ths.

At the commencement of this month the atmosphere was very humid, and the mornings foggy; there was but little thunder and rain. On the 2d and 21st, there fell a small quantity of rain from Nimbus passing over. The sun was obscured on the 20th and 25th, and the greatest part of the 1st and 8th; the sky generally was clear at night; those days on which there was but little wind the heat was very oppressive, especially on the 10th and 11th. Vespertine lightning on the 2d, 16th, and 30th.

* This is a very neat instrument, invented by Capt. Kater, in which the space between extreme moisture and extreme dryness is divided into 1200 equal parts.

METEOROLOGICAL OBSERVATIONS

FOR JULY, 1822.

Made at the New-York Hospital, by RICHARD PENNELL, M. D.

	Barometer.			Thermometer.			Winds.			Rain Gauge.	Hygrometer.	Weather.
	7 AM	2 PM	9 PM	7 AM	2 PM	9 PM	7 AM	2 PM	9 PM			
1	30 18	30 18	30 18	78	94	73	sw	sw	s	—.16	653	cloudy
2	30 18	30 12	30 10	75	87	71	s	sw	sw	1. 63	685	do
3	30 08	30 00	30 00	76	87	76	sw	sw	s		700	do
4	30 00	30 08	30 18	76	93	75	s	s	s		686	do
5	30 20	30 24	30 20	75	88	76	s	s	s		694	do
6	30 20	30 20	30 20	77	87	75	s	s	s	1. 84	720	do
7	30 20	30 10	30 10	78	92	75	n	s	s	—.18	736	do
8	30 04	29 94	29 90	75	92	74	sw	sw	sw		748	do
9	29 90	30 04	30 18	76	85	76	nw	nw	nw		660	clear
10	30 33	30 33	30 30	73	91	80	nw	sw	sw		653	do
11	30 30	30 22	30 16	77	85	76	sw	sw	sw		650	variable
12	30 08	30 08	30 08	75	86	74	sw	sw	nw	—.34	710	cloudy
13	30 10	30 10	30 00	76	84	72	nw	nw	nw	—.67	726	do
14	30 00	30 00	30 00	72	88	78	sw	sw	sw		732	variable
15	29 96	29 98	30 06	78	87	72	sw	w	w	—.11	730	cloudy
16	30 10	30 18	30 24	72	88	76	w	nw	nw		700	variable
17	30 30	30 30	30 30	70	87	77	nw	nw	sw		660	clear
18	30 30	30 30	30 30	75	92	79	sw	sw	n	—.06	663	variable
19	30 30	30 26	30 20	76	92	78	n	s	s		665	do
20	30 18	30 10	30 10	79	96	78	sw	sw	sw	—.04	656	cloudy
21	30 18	30 18	30 18	79	90	78	sw	sw	sw		645	clear
22	30 10	30 06	30 00	76	85	78	w	w	sw		645	do
23	30 00	30 00	30 00	76	90	76	sw	sw	sw	—.28	675	do
24	30 00	30 00	30 00	73	88	71	sw	n	n		655	cloudy
25	29 94	29 98	30 00	72	82	76	w	w	w		665	do
26	30 08	30 20	30 26	68	80	70	w	nw	nw		630	clear
27	30 28	30 28	30 28	65	81	73	nw	nw	nw	—.32	645	clear
28	30 20	30 12	30 12	70	88	75	s	s	nw	—.03	670	cloudy
29	30 10	30 26	30 26	73	83	73	nw	n	n		650	clear
30	30 40	30 40	30 40	70	85	74	n	e	e		634	do
31	30 47	30 47	30 40	71	87	70	e	e	e		650	do

The quantity of rain which fell this month, is 5 inches 66—100ths.

This month was remarkable for its unusual humidity, and its numerous and heavy falls of rain. We were visited by thunder, lightning, and rain, on the 1st, 2d, 6th, 7th, 18th, 20th, 24th, and 28th. Vespertine lightning on the 3d, 7th, and 28th. The sun was totally obscure on the 6th. The rain on the 27th. fell in the night.

METEOROLOGICAL OBSERVATIONS
FOR AUGUST, 1822.
Made at the New-York Hospital, by Richard Pennell. M. D.

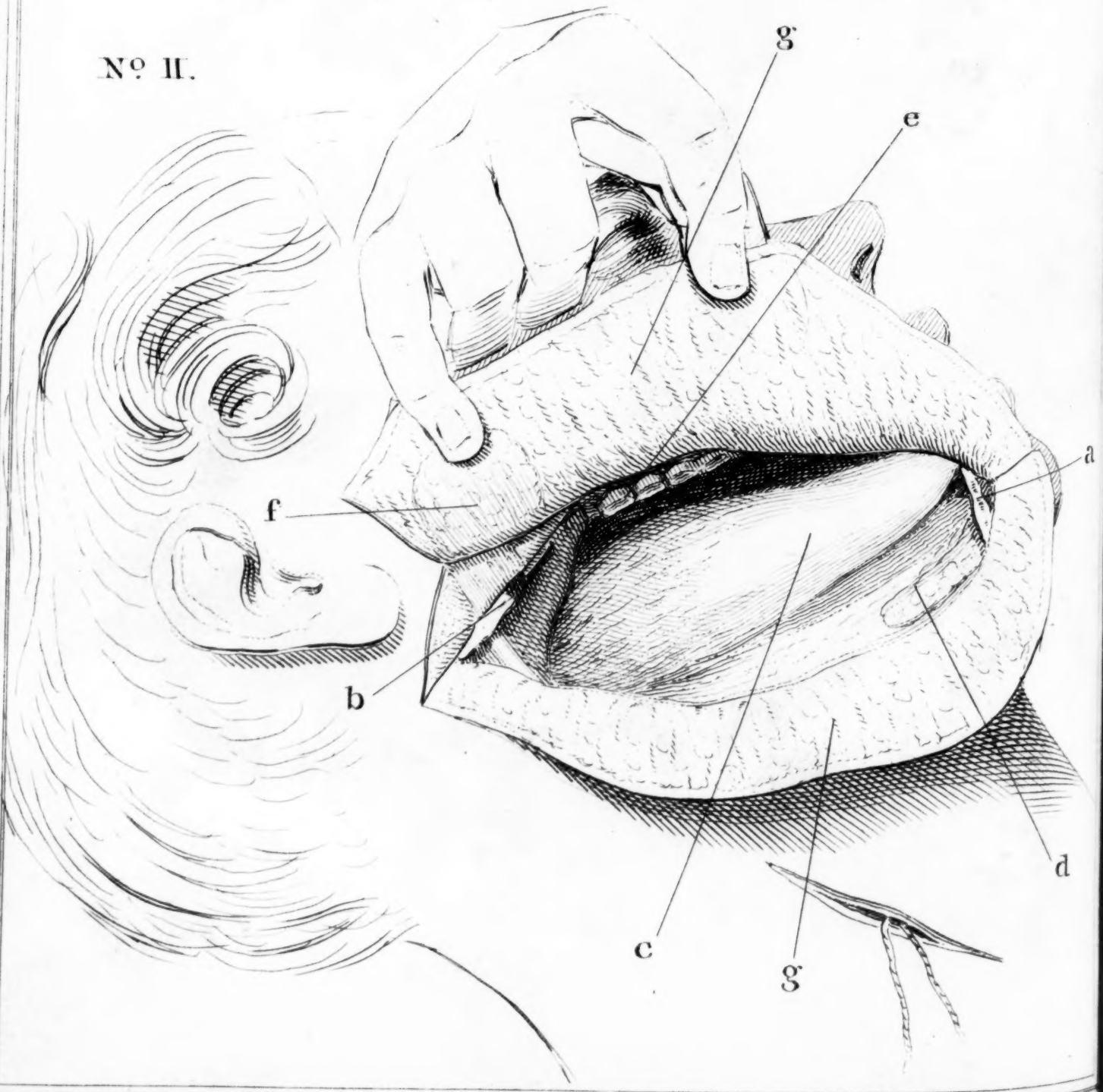
	Barometer.			Thermometer.			Winds.			Rain Gauge.	Hygrometer.	Weather.
	7 A M	2 P M	9 P M	7 AM	2 PM	9 PM	7 AM	2 P M	9 PM			
1	30 40	30 40	30 38	70	84	72	e	e	sw		656	clear
2	33 30	30 22	30 20	71	87	73	sw	sw	sw	—.27	670	cloudy
3	30 16	30 16	30 10	75	89	76	sw	s	s		705	do
4	30 03	30 00	29 80	76	94	74	s	s	nw	—.42	698	do
5	29 90	30 06	30 10	74	80	70	nw	nw	nw		665	clear
6	30 10	30 22	30 28	64	78	67	ne	ne	ne		647	do
7	30 38	30 40	30 40	67	75	68	e	se	se		643	do
8	30 47	30 47	30 47	64	82	72	se	ne	ne		638	do
9	30 47	30 40	30 40	72	86	70	sw	s	s		645	do
10	30 40	30 40	30 34	72	88	72	s	s	s		650	do
11	30 30	30 30	30 30	72	92	74	sw	sw	sw		645	do
12	30 30	30 28	30 23	74	90	79	sw	sw	sw		648	do
13	30 23	30 20	30 20	75	89	79	sw	sw	sw		652	do
14	30 32	30 32	30 22	70	85	70	nw	nw	nw		670	cloudy
15	30 10	30 00	30 00	74	92	75	s	s	s	—.02	662	do
16	30 17	30 17	30 17	70	90	76	nw	sw	sw		650	clear
17	30 17	30 17	30 17	74	91	78	sw	sw	sw		664	do
18	30 20	30 20	30 20	70	86	74	ne	ne	ne		680	cloudy
19	30 15	30 15	30 00	72	85	75	se	s	s	—.17	700	do
20	30 00	30 00	30 00	77	94	76	s	s	s		660	do
21	30 00	30 00	30 00	75	88	75	nw	nw	nw		660	do
22	30 08	30 10	30 18	73	85	74	e	e	e	—.17	660	variable
23	30 25	30 25	30 25	65	80	71	e	ne	ne		672	cloudy
24	30 25	30 25	30 25	69	80	75	se	se	s	—.03	670	do
25	30 36	30 36	30 36	66	85	74	s	ne	se		660	clear
26	30 36	30 36	30 30	70	84	70	se	se	se		660	do
27	30 30	30 30	30 20	68	78	68	ne	ne	ne		656	do
28	30 16	30 16	30 16	67	80	70	ne	ne	ne		660	cloudy
29	30 20	30 20	30 20	72	88	73	ne	ne	ne		660	clear
30	30 40	30 40	30 40	64	81	69	ne	ne	ne		656	cloudy
31	30 40	30 40	30 40	65	82	70	ne	ne	ne		656	do

The quantity of rain which fell this month, is 1 inch and 8—100ths.

This month attracts our notice for the number of devastating tornadoes that happened in different parts of the United States; its arid atmosphere, clear starry nights, and moderate rains. 4th. Clear morning, wind S.; at 3 P. M., wind changed to N. W.; it soon began to blow tremendously; the dust ascended in large quantities, so as to obscure some parts of the city: it laid prostrate a number of trees, and did considerable damage; it was accompanied with loud thunder, lightning, and rain, which lasted until half past 4 P. M. We had likewise thunder, &c. on the 15th and 22d. A beautiful double rainbow was seen in the south on the 15th, at 7 P. M. Vespertine lightning on the 4th, 15th, 19th, and 20th. On the night of the 9th and 10th, I observed a number of shooting meteors.

Nº I.

Nº II.



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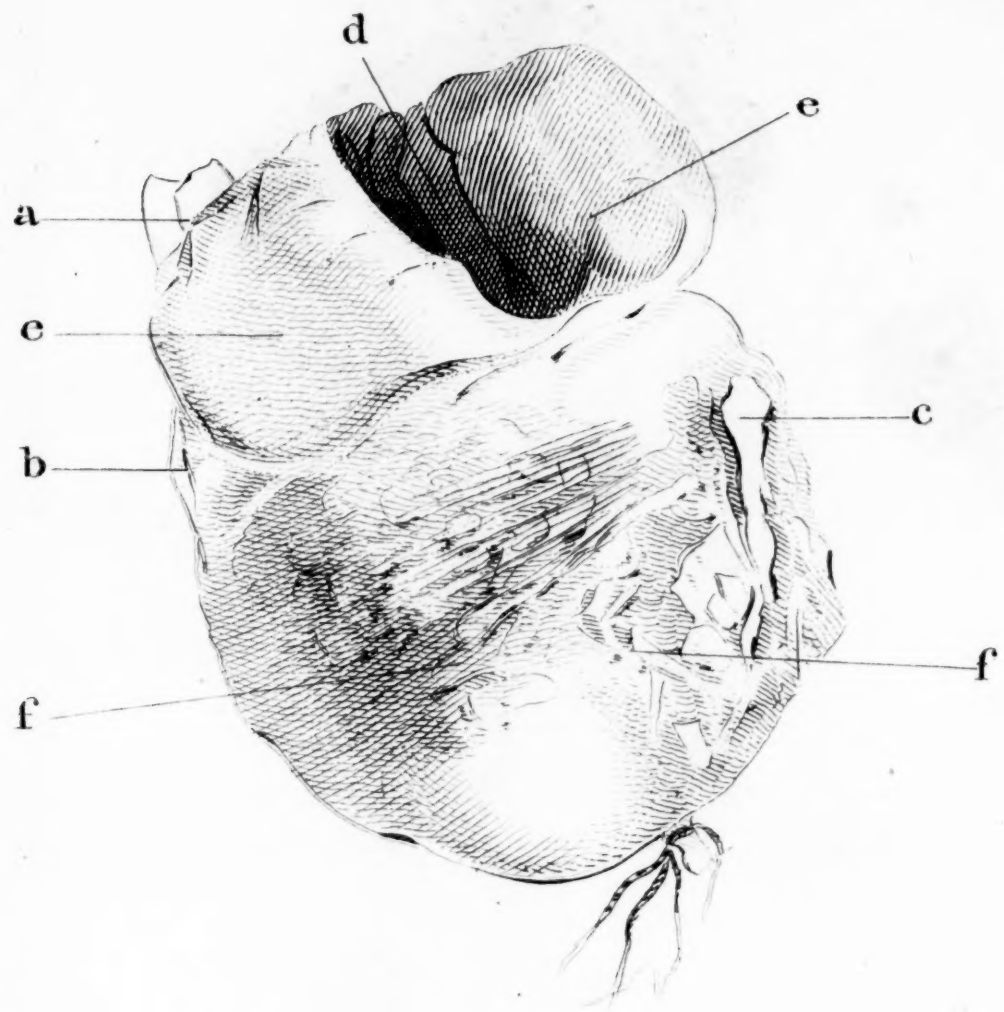

Nº IV.